Architectural Library APR 12 1921

THE BUILDER

A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

VOLUME CXX. No. 4078. Seventy-ninth Year.

FRIDAY, APRIL 1, 1921.
REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

PRICE NINEPENCE.
By Post 11d. (This Week).

HOBBS, HART, & CO.'S
LOCKS
LOCKS
LOCKS
LOCKS
LOCKS
LOCKS
SECURITY.
DURABILITY.
ECONOMY.
76, CHEAPSIDE, E.C.2

VAN KANNEL
REVOLVING DOOR CO.,
LIMITED.
FIRST IN 1899 | FOREMOST IN 1921
ONLY ADDRESS:
WATFORD, ENGLAND

PARQUET, HARDWOOD & DANCING FLOORS.
Specialists—COLONIAL WOODS.
DAMMAN & CO., LTD.,
137, PARK RD., ST. JOHN'S WOOD, N.W. 8

HYDRAULIC LIFTS. NO OVERWINDING.
LONDON HYDRAULIC POWER CO
HATFIELD STREET, S.E.1. HOP. 4340.

THE LIFT & HOIST Co.
Sole Makers of "Premier" Rolling Shutters.
108-114, Prince Street, DEPTFORD, S.E.

WAYGOOD-OTIS LIFTS
Offices:—54-5, Fetter-lane, E.C.4 (T.N.: Holborn 2001, T.A.: "Waygood, Fleet, London"); 62-3, Lionel-street, Birmingham (T.N.: Cen. 40 Birmingham, T.A.: "Waygood, Birmingham"). Works: Falmouth-road, London, S.E.1

TITAN LIFTS.
THE TITAN LIFT CO., Ltd.,
20, HIGH HOLBORN, W.C. Telephone—4687 HOLBORN

ELECTRIC LIFTS
Smith, Major, & Stevens, Ltd. LONDON & NORTHAMPTON.
(Late Archibald Smith & Stevens).

LIFTS
for domestic purposes—hand-power
REVOLVING SHUTTERS
Sam'l. HASKINS & Bros., Ltd., Old St., London, E.C.1

THE EXPRESS LIFT CO., LD.
GREYCOAT STREET WORKS,
WESTMINSTER S.W.1
ALL TYPES.
'Phone: Victoria 6115 (3 lines).

EWART'S
"EMPEROR" SMOKE CURE
Cures Smoky Chimneys.
Catalogue on application.
EWART & SON, Ltd., Euston Rd., London.

MODELS OF WORKS BUILDINGS ESTATES. etc.
Executed by JOHN B. THORP,
98, Gray's Inn Road (next to Holborn Hall),
Phone Holborn, 1011 LONDON, W.C.1

Rolling Shutters, Lifts
IRON DOORS, STAIRS, GATES.
DENNISON, KETT & CO., LTD.
Tel.: Bank 0356. 11, Queen Victoria St., E.C.

STOVES
THE "INTER-OVEN" (Reg'd. Trade Mark.)
The ONLY Reliable Convertible Stove. See page lvi

SIMPLEX LEAD GLAZING
FOR ROOFS, SKYLIGHTS & HORTICULTURAL WORK.
No Zinc, Iron or Putty Used.
No Special Contract Required.
GROVER & Co., Ltd
BRITANNIA ENGINEERING WORKS.
CARPENTERS ROAD, STRATFORD, E15

TRADE MARK NOBLES & HOARE LONDON VARNISH Nobles & Hoare ENAMEL TRADE MARK NOBLES & HOARE LONDON

MILD STEEL ROUNDS FOR FERRO-CONCRETE
ALL SIZES.
BARS BARS BARS
PROMPT DELIVERIES FROM STOCK AND WORKS.
HELICAL BAR CO., 1, VICTORIA STREET, WESTMINSTER, S.W.1 Victoria 1940 & 1941.

"I have seen several different forms of Mr. Boyle's Air-Pump' Ventilator in actual operation, and have much pleasure in testifying to their efficiency."—LORD KELVIN.
Boyle's
LATEST "PATENT AIR-PUMP" VENTILATOR.
HAS DOUBLE the EXTRACTING POWER of Earlier Forms
Awarded the £50 Prize with Grand Diploma (only prize offered), at the International Ventilator Competition, London. Highest Award, International Ventilator Competition, Paris, Two Gold Medals.
"Mr. Boyle's complete success in securing the required continuous upward impulse is testified to by high authorities."—GOVERNMENT REPORT (Blue Book).
ROBERT BOYLE & SON,
Ventilating Engineers,
84, HOLBORN VIADUCT, LONDON.
"Messrs. Robert Boyle and Son, the founders of the profession of Ventilation Engineering, have raised the subject to the dignity of a science."—REPORT ON THE VENTILATION OF THE LONDON CUSTOM HOUSE.

CERTUS
Premier Cold-water
GLUE

TRADE MARK
Needs no Soaking, Melting, or Warming.
CERTUS holds securely all kinds of Wood, as well as Iron, Glass, Marble, Concrete, etc., etc.
Write for List B and Sample.
CENTRAL CHEMICALS, LTD.
8-10, Little Suffolk Street
(Off Great Suffolk Street),
LONDON S.E.1

PARTITION SLABS
IMMEDIATE DELIVERY.
CONCRETE SLABS CO.
WOOD LANE (Opposite the Stadium)
SHEPHERD'S BUSH, W. 12.

HEATING
ROSSER & RUSSELL, Ltd.
(MAYFAIR 5210)
37 DUKE STREET, OXFORD STREET,
LONDON, W.1

MEDWAY'S
SAFETY LIFT COMPANY
LIMITED.
LIFTS
1 & 2, BUCKLERSBURY, E.C.4. City 4366.

Analysis of Advertisements.

Aerated Water Machines—
Fingel & Co., Ltd.
Artificial Stone—
Brookes Ltd [Ltd.
Cambridge Artificial Stone Co.,
Concrete Units Co.
Empire Stone Co., Ltd.
Patent Impervious Stone
Stuart's Granolithic Co., Ltd.
Asbestos Tiles & Sheets—
Bell's United Asbestos Co.
British Everite & Asbestilite Works, Ltd.
British Fibrocement Works.
British Roofing Co., Ltd.
British Uralite Co, (1908) Ltd.
Machin & Kingsley, Ltd
Martinit Slate & Sheet Co., Ltd
Sankey, J. H. & Son, Ltd.
Speaker, G. R. & Co.
Turner Bros. Asbestos Co., Ltd
Asphalte—
Bradshaw's Asphalte Co. Ltd
Bradshaw, J. H.
Engert & Rolfe Ltd
Falde's
Hobman, A. C. W. & Co. Ltd.
Limmer & Trinidad Lake Co
Ragusa Asphalte Co. Ltd.
Val de Travers Asphalte Co.
Barrows—
Finch, M. & Son
Mottram, G. W.
Rowland Bros.
Trollope & Colls, Ltd.
Bells, &c.—
Carr, Chas. Ltd.
Gillett & Johnston
Bitumen Sheeting—
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe Ltd.
McNeill, F. & Co. Ltd.
Vulcanite Ltd.
Wailes Dove Bitumastic, Ltd
Blind Cords—
Anchor Brand.
Woods Sons & Co.
Blinds (Window, &c.)—
Bryden, John, & Sons
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros.
Meighan, James & Son
Williams G. A. & Son
Boilers—
Oakshroad Robey & Co., Ltd.
Danks, H. & T. (Netherton),
Hartley & Sugden, Ltd.
Jenkins, Robert, & Co., Ltd.
Kinnell Chas. P. & Co. Ltd
Lumbra, Ltd.
Bricks—
Builders' Material Association
Burley, C. Ltd.
Dennis, Henry
Lawford & Sons, Ltd.
Leeds Fireclay Co. Ltd
Moler Fireproof Brick Co.
Rufford & Co.
Sankey, J. H. & Son, Ltd.
Smeed, Dean & Co, Ltd.
Ward, R. G. & Co.
Young & Son
Builders' Ironmongers—
Cakebread Robey & Co., Ltd.
Cochrane, John
Hodge, Fred, Ltd.
Nicholls & Clarke
O'Brien, Thomas & Co.
Shaw & Carter, Ltd.
Van Sint Jan, Sylvain
Wilson, G. L. & Co. Ltd.
Worcester Brass Co., Ltd.
Young & Marten, Ltd
Building Contractors—
Chessums, Ltd.
Higgs & Hill, Ltd.
Mansell E
Somerville, D. G & Co. Ltd
Williams Howell J. Ltd.
Cartage Contractors—
Bissell, J. A.
Earley
Mears, Joseph
Castings—
Atlantis Engineering Co., Ltd.
Bayliss, Jones & Bayliss, Ltd
Haywards, Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.
Cement, Lime, Plaster—
Assoc, Portland Cement Mfrs.
British Portland Cement Mfrs.
Builders' Material Association
Burley, C. Ltd.
Cement Marketing Co
Greaves, Bull & Lakin, Ltd
Kaye & Co, Ltd.
Lawford & Sons, Ltd
Martin Earle & Co.
Oxford Portland Cement Co.
Sankey, J. H. & Son, Ltd.
Smeed, Dean & Co. Ltd.
Super Cement, Ltd.
Wouldham Cement Co.
Young & Son
Cement Waterproofing—
Bareau
Ironite Co., Ltd.
Pudlo
Pruflt
Sankey, J. H. & Son, Ltd.
Clocks (Church & Tower)—
Gillett & Johnston
Chimney Cowls, &c.—
Cochrane, John
Ewart & Son, Ltd.
Farmiloe, George & Sons, Ltd
Nicholls & Clarke, Ltd.
Young & Marten Ltd
Chimney Shafts—
Chimneys Limited
Danks, H. & T. (Netherton) Ltd
Furse, W. J
Concrete Houses—
Bremners.
Concrete Units Co.
Concrete Machinery—
Armstrong & Bell
Australia Pat. Concrete Block
Builders and Contractors Plant, Ltd.
Byrd, A. A. & Co.
Chalmers-Edina Co.
Ingersoll-Rand Co.
Kirk, R. H. & Co.
Liner Concrete Machinery Co.
Martin-Harvey Co
Millars' Timber & Trading Co.
Parker, F.
Parker, Winder & Achurch Ltd.
Price & Co., Frank G.
Ransome Machinery Co., Ltd.
Stothert & Pitt
Vickers, Ltd.
Whitaker, R. G., Ltd.
Winget, Limited
Coatostone—
Coatostone Decoration Co
Concrete Piling—
Simplex Concrete Piles, Ltd.
Somerville D. G. & Co. Ltd.
Concrete Specialities—
Building Products, Ltd.
Concrete Blocks, Ltd.
Concrete Units Co.
Gloucester Concrete Construction Co., Ltd.
Helical Bar & Engineering Co
Concrete (Reinforced)—
British Reinforced Concrete
Concrete Units Co.
Expanded Metal Co., Ltd.
Fawcett Construction Co., Ltd.
Improved Concrete Construction Co, Ltd.
Indented Bar & C. Eng. Co,
Johnson's Reinforced Concrete
Lind, Peter & Co.
Patent Impervious Stone Co.
Self-Sentering Ex. Metal.
Somerville, D. G. & Co., Ltd.
Stuart's Granolithic Co., Ltd.
Stewart, J. & W.
Trussed Concrete Steel Co., Ltd
Contractors' Plant—
Anderson, Thomas & Co., Ltd
Boyer, Henry
Builders and Contractors Plant, Ltd.
Builders' Material Association
Building Products, Ltd.
Byrd, A. A. & Co
Caylees Bros. (Battersea)
Lewis & Lewis Ltd
Palmer's Travelling Cradle
Parker, F. & Co.
Rom River Co., Ltd.
Rowland Bros.
Ruston & Hornsby, Ltd.
Stephen & Carter Ltd
Cranes, Excavators, &c.
Ruston & Hornsby, Ltd.
Damp Proof Courses—
Briggs, W., & Sons Ltd.
Building Products, Ltd.
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe, Ltd.
Hobman, A. C. W. & Co. Ltd.
Ironite Co. Ltd. (The)
Kerner-Greenwood & Co. (Pudlo)
McNeill F. & Co Ltd.
New Tylerybont Stone and Asphalte Co., Ltd.
Permanite, Ltd.
Ragusa Asphalte Co. Ltd.
Rowse & Co.
Titon (Liverpool) Ltd.
Vulcanite Ltd
Decorators' Dust Sheets—
Moore, W. & Co.
Demolition—
Boyer, Henry
Cowell, A. E. & Co.
Greenham, Henry J.
Doors (Iron, Steel, &c.)—
Anderson, Thomas & Co., Ltd
Bryce, White & Co.
Dennison, Kett, & Co. Ltd
Gibson, Arthur L.
Haywards, Ltd.
Hobbs, Hart, & Co. Ltd.
Lift and Hoist Co.
Mather & Platt, Ltd.
Stavera & Robinson.
Van Kannel Revolving Door Co.
Door Hangers & Rollers—
Bousfield's Ironworks.
Nicholls & Clarke, Ltd.
O'Brien, Thomas, & Co.
Parker, Winder & Achurch
Young & Marten Ltd
Door Springs and Hinges—
Nicholls & Clarke, Ltd.
Young & Marten Ltd
Drawing Instruments—
Baker C.
Clarkson's.
Dressers, etc.
Bowman, M.
Crowe, G. E. W.
Electric Lamps—
Mazda.
Electric Lighting & Fittings—
Dalarn Engineering Co.
General Electric Co., Ltd.
Mather & Platt, Ltd
Sims & Sims
Tredegars Ltd
Troy & Co. Ltd
Underwood (Manchester), Ltd.
Engines, Mortar Mills—
Lewis & Lewis, Ltd.
Facias, &c.—
Francis, S. W & Co. Ltd.
Haskins, S., & Bros., Ltd.
Felt—
Anderson, D. & Son, Ltd.
Engert & Rolfe, Ltd.
Gibson, Arthur L.
McNeill F. & Co. Ltd
Sankey, J. H. & Son, Ltd.
Titon (Liverpool) Ltd.
Fencing (Wood, &c.)
Ferndon Fencing Co., Ltd
Ford, H. J.
"Invicta" Fencing Co.
Neville Hine & Co.
Rowland Bros.
Fibre for Mixing—
Woods, Sons and Co
Fire Escapes, Staircases—
Clark, Hunt, & Co. Ltd.
Davis, H. & C. & Co. Ltd.
Haywards Ltd.
Lift and Hoist Co
Fireproof Flooring, &c.—
Bell's United Asbestos Co.
British Reinforced Concrete
Building Products, Ltd. (Ferrolithic)
Dawnay, A. D. & Sons, Ltd.
Expanded Metal Co. Ltd.
Haywards, Ltd.
Homan & Rodgers, Ltd.
Ironite Co. Ltd.
King, J. A. & Co
Kleine Pat. Flooring Co. Ltd.
Moler Fireproof Brick & Partition Co., Ltd.
Sankey, J. H. & Son. Ltd.
Stewart Fireproof Floor Co.
Somerville D. G. & Co. Ltd.
Thermos Flooring Co. Ltd
Flint Paper—
Oakey, J. & Sons Ltd.
Folding Partitions—
Educational Supply Assoc., Ltd.
Lift and Hoist Co.
Thornborough & Co. Ltd.
Garden Hose—
Wilcox, W. H. & Co. Ltd.
Woods, Sons & Co.
Gates (Collapsible)—
Acme Metal Works
Bostwick Gate Co., Ltd.
Dennison, Kett, & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co
Thornborough & Co. Ltd.
Gates, Railings (Iron), &c.—
Bayliss, Jones & Bayliss, Ltd
Haywards, Ltd.
Nicholls & Clarke Ltd.
Young & Marten, Ltd.
Gates (Wood)—
Rowland Bros.
Glue (Liquid)—
Croid
Pactol
Glue (Powder)—
Lactocol
Glass (Plate & Window)—
Borton, H. & Co.
British Luxfer Prism Synd.
Clark J. & Son, Ltd.
Eaton, Parr & Gibson, Ltd.
Farmiloe, George & Sons. Ltd.
Haywards, Ltd.
King, J. A. & Co
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke,
Pilkington Bros., Ltd.
Van Sint Jan, Sylvain
Young & Marten Ltd.
Glass Paper—
Oakey, J. & Sons. Ltd
Glass (Stained, Painted)—
British Luxfer Synd., Ltd.
Clark, J. & Son
Farmiloe, George & Sons, Ltd.
Gibbs, W., & Sons, Ltd.
Haywards, Ltd.
King, J. A. & Co.
Nicholls & Clarke
Sparrow, Sylvester
Young & Marten Ltd.
Glazing—
Borton, H. & Co.
Braby, F. & Co. Ltd.
British Luxfer Synd., Ltd.
Farmiloe, George & Sons, Ltd.
Freeman's
Grover & Co. Ltd.
Haywards, Ltd.
Helliwell & Co. Ltd.
King, J. A. & Co.
"Metacon" Patent Glazing
Nicholls & Clarke, Ltd
Partridge, T. & Co.
Wotton & Son
Young & Marten, Ltd
Gutter Brackets—
Parker Winder & Achurch
Heating and Lighting
Aerogen Co., Ltd.
Central London Electrical
Clark, Hunt, & Co., Ltd.
Dunham Co., Ltd., C. A.
Ewart & Son, Ltd.
Hartley & Sugden Ltd.
Haywards, Ltd.
King & Co., Ltd.
Kinnell Chas. P. & Co., Ltd
Martin Engineering Co., Ltd.
Messenger & Co.
Murray, S. D. & Co., Ltd.
Musgrave & Co. Ltd.
Nicholls & Clarke, Ltd.
Parker Winder & Achurch, Ltd.
Rosser & Russell Ltd
Self Engineering Co., Ltd.
Spensers, Ltd.
Walker, H. & Son, Ltd.
Waring, Withers & Chadwick
Young & Marten Ltd
Hot Water Supply—
Clark, Hunt & Co. Ltd.
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Fildes, Thos.
Jenkins, Robert & Co. Ltd.
Keith, James, & Blackman
Martin Engineering Co., Ltd.
Murray, S. D. & Co., Ltd.
Potterton, Thos.
Rosser & Russell, Ltd.
Hydraulic Power—
London Hydraulic Power Co.
Insurance—
London and Lancashire Fire,
Somers, R. G.
Timber Trades Mutual Accident
Ironite—
Ironite Co. Ltd.
Joinery, Mouldings, &c.—
Austins (East Ham & Ilford),
Baltic Saw Mills Co., Ltd.
Boulton & Paul, Ltd.
Bowman, M. [Ltd.
Cabinet Co. (South Lambeth),
Central Aircraft Co.
Collins & Co.
Easton & Co., A. J.
Falcon Works, Ltd.
Foulds, Arthur, Ltd.
Franks, Herbert & Co.
Gosport Cabinet & Joinery Works.
Henry, George & Co.
Heal & Son
Hobbs, W. J.
Holt, J. & Son.
Jennings, C. & Co.
Malpas Joinery Works
Middlesex Joinery Works Ltd.
Morley, E. & Sons
Newman, John, Ltd.
Ogilvie & Co.
Orfeur, C. E. Ltd.
Peacock, Chas. & Co.
Premier Joinery Co., Ltd.
Roach, H.
Slade, Geo. & Co., Ltd.
Thornborough & Co. Ltd.
Tucker, W. Duncan, & Sons
West Heath Joinery Works.
West London Timber & Moulding Co. Ltd
White, John P. & Sons, Ltd.
Jointless Flooring—
Bell's United Asbestos Co.
Brentford Construction Co.,
British Bolement Co. Ltd
Durate
Ebner, J. F.
King, J. A. & Co.
Linolite Composition Co.
Thermos Flooring Co. Ltd
Walker, Chas. & Co.
Wilfley Co. Ltd.
Ladders—
Acme Patent Ladder Co.
Cayless Brothers (Battersea),
Drew, Clark & Co.
Finch, M. & Son
Lawford & Sons, Ltd.
Parker & Co
Stephens & Carter
Thomas, H. Johnston
Trollope & Colls, Ltd
Laundry Appliances—
Bradford, T. & Co. Ltd
Letters, &c.—
Francis S. W. & Co Ltd.
Lead, Oil, Colours, Size, &c
Builders' Material Association
Farmiloe, G. & Sons, Ltd.
Farmiloe, T. & W. Ltd.
Girdler, J. & Co.
Hodge, Fred. Ltd.
Nicholls & Clarke
Titon (Liverpool) Ltd.
Young & Marten, Ltd.
Lifts, Hoists, Cranes, &c.—
A. & A. Electrical Co. Ltd.
Bryden John, & Sons
Dennison, Kett & Co., Ltd
Express Lift Co., Ltd.
Gimson & Co. (Leicester) Ltd.
Haskins, S. & Bros. Ltd.
Lewis & Lewis, Ltd.
Lift and Hoist Co.
Medway's
Smith, J. Bardell, & Co.
Smith, Major & Steven, Ltd.
Steven, A. & P.
Titan Lift Co. Ltd.
Vaughan Crane Co., Ltd.
Waygood-Otis Ltd.
Lightning Conductors—
Furse, W. J.
Locks, Latches, &c.
Hobbs, Hart & Co. Ltd
Nicholls & Clarke Ltd
Shaw & Carter, Ltd.
Young & Marten Ltd.
Machinery— [Ltd.
Anglo-Hollandia Machineries,
Johnson C. H. & Sons. Ltd
Jonsered's London Agency
Parker, F.
Marble— [Ltd.
Art Pavements & Decorations,
Bomert, Teves and Blankley
Ebner, J. F.
Kelly & Co
Manu-Marble Co.
Moore, M. & E.
Walker, Chas. & Co.
Webb, Percy C., Ltd.
Metaforms—
Byrd, A. A. & Co.
Metal Casements—
Avis, W. A.
British Luxfer Syndicate, Ltd.
Butt, F.
Crittall Manufacturing Co.
Etherton & Williams,
Farmiloe, George & Sons Ltd
Gibbons, Jas., Ltd.
Haywards, Ltd.
Nicholls & Clarke Ltd.
Oldaker, W. & J. H.
Standard Metal Windows Co.
Young & Marten, Ltd.
Metal Work—
Marshall, R. E. & C. Ltd.
Shrivell, Wm., Ltd.
Thornborough & Co., Ltd.
Model Makers—
Partridge, L. H.
Thorp, J. E.
Mosaic Work—
Brookes, Ltd.
Ebner, J. F.
Jackson, Geo F.
Maw & Co. Ltd.
Moore, M. & E.
Motor Vehicles, Transport
Keith & Boyle (Edin.), Ltd.
London & Midland Motors, Ltd
Mann's Pat. Steam Cart and Wagon Co.
Renault Lorry
Taylor, Harry & Sons, Ltd.
Tilling, Ltd.
Tuke & Bell, Ltd.
Paints, Stains, Varnish—
Aspinalls, Ltd.
Berger, Lewis, & Sons, Ltd.
Blundell Spence & Co., Ltd.
Builders' Material Association
Clark, Rebt. Ingham & Co. Ltd.
Cory, Horace & Co., Ltd.
Cuirass Products, Ltd.
Dizon's White, Ltd.
Farmiloe, George & Sons, Ltd
Farmiloe, T. & W. Ltd.
Gay R. & Co., Ltd
Gelatinous White Co.
Nicholls & Clarke, Ltd.
Nobles & Hoare, Ltd.
Ross, Sir A. W. & Co., Ltd.
Sankey, J. H. & Son, Ltd.
Silicate Paint Co.
Stephens, H. C.
Titon (Liverpool) Ltd.
Van Geelkerken & Co., Ltd.
Vitrolite Construction Co. (Europe), Ltd.
Wilson, G. L. & Co.
Young & Marten Ltd.
Parquet Flooring—
Artistic Flooring and Decorating Co
Damman & Co.
Ebner, J. F.
Turpin's
Walker, Chas. & Co.
Partitions, Sinks, &c.—
British Uralite Co. (1908)
Builders' Material Association
Concrete Blocks, Ltd.
Concrete Units Co.
Educational Supply Co. Ltd.
Expanded Metal Co. Ltd.
Jones, Fredk. & Co. Ltd.
King, J. A. & Co.
Lawford & Sons, Ltd.
Muribloc (Partition Slabs), Ltd
Sankey, J. H. & Son Ltd.
Thames Mills
Wright, J. & Co.
Pavement, &c., Lights—
British Luxfer Prism Synd.
Haywards, Ltd.
King, J. A. & Co
Picture Cords—
Anchor Brand
Woods, Sons & Co
Pipe Yarns—
Woods, Sons & Co.
Pumps, Pumping Engines
Barclay, James
Boulton & Paul, Ltd.
Braby, F. & Co. Ltd
Phoenix Engineering Co Ltd.
Pulsometer Engineering Co
Wilcox, W. H. & Co, Ltd.
Rawlplugs—
Rawlplug Co.
Rooflights—
Braby, F. & Co. Ltd.
British Luxfer Prism Synd.
Roofing Compounds—
Barendale & Co., Ltd., "Texo."
Callender, Geo. M. & Co., Ltd
Cuirass Products
"Paroteex."
Titon (Liverpool), Ltd
Reparo, Ltd.
Roofing (Felt)—
British Roofing Co. Ltd.
Certain-teed Products
Cuirass Products, Ltd.
McNeill F. & Co. Ltd.
New Tylerybont Stone and Asphalte Co., Ltd.
Vulcanite Ltd
Roofings (various brands)
"Alligator" (British Roofing Co. Ltd.)
Certain-teed Products
"Challenge" (Briggs & Sons)
"Leon" (F. McNeill & Co.)
"Rok" (D. Anderson & Son, Ltd
"Ruberoid" (Ruberoid Co. Ltd)
"Titon," Titon Ltd.
"Vulcanite" (Vulcanite Ltd)
Roofs (Zinc and Copper)—
Braby, F. & Co. Ltd.
Ewart & Son, Ltd.
Ropes (Fall and Scaffold)—
Brown, J. H. & Co.
Bullivant & Co., Ltd.
Woods, Sons & Co.
Safes—
Hobbs, Hart, & Co. Ltd.
Tann, John Ltd.
Sand, Gravel, &c.
Bennett, John
Boyer Henry
Concrete Units Co
Hodgesdon Sand Pits, Ltd.
Lawford & Sons, Ltd.
Sankey, J. H. & Son, Ltd.
Stanwell Silica Co., Ltd.
Stokes, J. W. G.
Sanitary Appliances and Ware—
Andrew & Nanson
Builders' Material Association
Burn Bros.
Cakebread Robey & Co., Ltd.
Doulton & Co. Ltd.
Emanuel, A. & Sons, Ltd.
Farmiloe, George & Sons Ltd
Haywards, Ltd.
Jennings, Geo., Ltd.
Leeds Fireclay Co. Ltd
Macfarlane, W. & Co.
Nicholls & Clarke
Rufford & Co
Sankey, J. H. & Son, Ltd.
Sessions & Sons, Ltd.
Thames Bank Iron Co. Ltd.
Young & Marten Ltd
Sash Lines, Cords, &c.—
Anchor Brand
Brown, J. H.
Woods, Sons & Co.

GEO. SLADE & COMPY., LTD.

SOLICIT ENQUIRIES FOR

JOINERY FOR HOUSING SCHEMES

LONDON MADE DOORS

SPECIAL DEPARTMENT From 20/- each. FOR OFFICE FURNITURE.

STAIRS 20/- TREAD.

OAK PANELLING £1,000 PER MILE.

BARNSBURY PARK, LONDON, N.1. Tel.: North 199.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXX.—No. 4078. APRIL 1, 1921.

A GREAT OPPORTUNITY.

IT is to be hoped that the public interest aroused in *The Times* correspondence on the subject of art will not be wasted. It would be a great pity if the opportunity now offered of bringing art more into the life of the nation were lost for lack of constructive ideas. There must be recognition of the need for a new outlook, for which a committee of public taste is no alternative, because it sustains the old shibboleths which the new values of the time reject. Professor Lethaby, it seems to us, alone touches deeper truth in saying that he is "a believer in man's natural æsthetic virtue," and that, "if left to themselves people would choose right." We ought not to miss the significance of this statement, for the prospects of this present opportunity almost wholly depend on the right understanding of it. It is on these foundations of respect for the public that the future of art must be built. We do not want propaganda by anonymous writers, however eminent; the veil of anonymity is, in any case, too thin to offer disguise of its leading influences.

We have referred before in these columns to the proposal to employ students of the schools to execute public wall-paintings. We desire every possible opportunity for the student, but if the art schools are to be made use of as producing instead of teaching centres the possibilities of abuse are tremendous. Besides, we shall not get the best work in this way. What is regrettable in this correspondence is that it misleads the public mind, which it directs to remedies which are no remedies. For it is not by adding further organisations to the multitude existing already but in reconstructing our thoughts as to the nature and requirements of art that will effect any good thing, and we see little sign of this in the correspondence. Is not this correspondence itself evidence of the failure of societies? And, if so, is it not time to consider whether all this editing of the public, which refuses to be edited, should give way to regarding the task as one belonging to the people themselves? We find but little realisation of this in the correspondence, which assumes too much the ignorance of the public and its own monopoly of æsthetic perception. So long as so-called culture and taste nurses its own superiority to the philistinism of public opinion it is spinning on its own little axis only instead of that of the world, which passes along on the other side; while it sustains all the false distinctions which such an attitude encloses.

And amongst these there is none more mischievous than that which would separate industry from art, in the sense of its common identity. Is it not, on the contrary, just these distinctions which withstand the right influence of beauty in the national life? We believe that the time has come when all the established views which colour, unfortunately, so much of this correspondence will have to be reconsidered and probably discarded altogether. For the conditions which govern the well-being of art are not very different from those which govern the well-being of industry, and art should, therefore, be treated in much the same way. But this entails the democratising of art, which clings to its old assumptions and exclusiveness. To identify art more closely with industry we must also disentangle it from all those questions of taste and the exclusiveness which has constantly contradicted its nature. If art were left free from all these irreconcilable issues and placed on a footing more like the industries of the country, where its true interests were furthered, free from all those very remedies now again being put forward—committees of public taste, advisory and selection committees—all the entire paraphernalia for editing art which has depressed its vitality for so many years; if it was free like trade and industry, furthered like industry by government organisation, conducted in the interests of all, leaving all free as far as possible, it would be seen that like the industries true value would be revealed and declare itself, eccentricities and excesses would be curbed, and that expansion would be found which arises when due consideration and opportunity are given for the sanity and rightness of ordinary public opinion to exercise itself.

There is, fortunately, already in existence as proof the recognition that art may rightly claim for itself support from the State, which it is entitled to equally with industry, the new British Institute of Industrial Art. Badly named and setting out to do the right thing in the wrong way—because influenced by reactionary elements which incorporated some of the old discredited points of view—none the less it did in its inception announce a new era for art. Unaware, perhaps, itself of the implications lying in its own formation, it was none the less the first step towards the complete democratising of art, and of restoring it to its natural association with industry. Art cannot be furthered by the State and retain all the old inequalities; it must learn from industry to forgo privileges which its present unnatural state upholds to its own undoing. It must compel an equal citizenship for art, leaving its justification to public opinion rather than selection committees, self-constituted groups, committees of public taste, and all the machinery which has overlaid its real nature. What are most of these supposed remedies now again put forward but the recurrent writhings of the sick patient who has tried every medicine but one. Art requires to abandon its many doctors and to believe in itself, in its divinely appointed mission. We are glad to see that this nursling, the new British Institute, is directing itself to the enlargement of its democratic basis, which it was the aim of some who were connected with it and identified with the old regime to withstand.

Having said this, we desire also to recognise how important it is that the Government should support adequately an Institution holding within its grasp a power for the welfare and expansion of art of great possibilities, and to hope that the grant will be forthcoming for the extension of its work. The British Institute should be quick to realise the magnitude of its own opportunities, and its directors should be bold in their statement of them, making clear the great service to national interests of an organisation to further art as industry is already furthered; which is, in fact, complementary to the latter and equally stimulating to both, encouraging the market for artistic work by making it free and open like industry. The lack of public knowledge and interest on art matters exists to a great extent because the whole subject has been torn from its proper setting in the industries of the country to carry on an abnormal artificial relationship, penetrated with dilletantism and personal aims. The new Institute is perhaps the one hope of re-establishing more vital relationship for art, developing it as trade is fostered and developed, not by establishing preferential treatment for any section, but leaving all free to establish its own claims as far as possible, with only such advisory direction as is necessary; the main object being concerned neither with schools nor theories, but only with the expansion and democratising of art. The time has come when all of us should take count of the new forces stirring in mankind towards the realisation of the ideals of democracy. We stand amid so much disappointment and falsified hopes that we should be swift to follow any roadway leading to the consolidation of the future, and the consideration of restoring beauty to life dominates every other. The present organisation of art is falling obsolete, into chaos, with the sinister shadow of bureaucratic domination threatening it, because no sufficient grasp has been taken of its present necessities. The inauguration of the British Institute of Industrial Art does open out the hope of a new era, and should have the backing from the Government which it needs in order to give national character to the concerns of art, so that it may be brought into full view of the people, in a belief of "man's natural æsthetic virtue." Lord Bryce, in his new book, rallies again the belief in the democratic idea, at a time of disappointment and relaxed hope. The feet are only muffled as yet which lead us towards the new horizons, but they will yet sound along the highways of the world. Art must have faith in democracy, not to be made of use to commerce, but because life cannot sustain itself without it, and in this faith and in England's lead towards its realisation, stricken, tortured Europe will find a road to peace.

NOTES.

The Housing Subsidies.

It seems probable now that the housing subsidy will be continued until June, 1922, and this will doubtless influence a good deal of private enterprise in cottage building. Whatever may be thought about the economic aspect of these subsidy grants, they have certainly stimulated private action. The interference with the rights of private ownership and the restrictions hindering private enterprise have borne and will bear fruit, so one cannot be surprised to hear of depression in many directions. If people are encouraged to build houses and afterwards find a reasonably good rent is to be denied them they may regret the bait of the subsidy.

Awards for Street Façades.

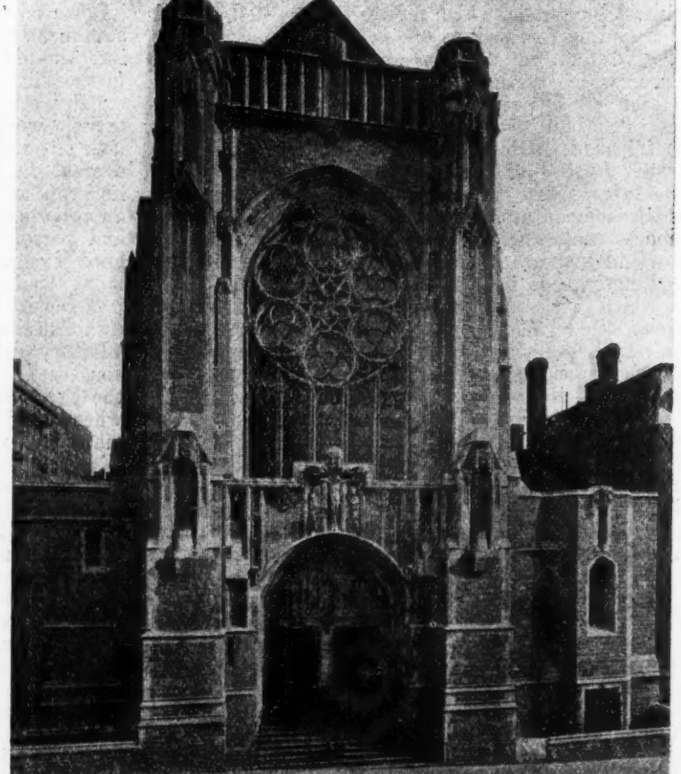
We are glad to know that during the past year a scheme has been worked out by the Royal Institute of British Architects for establishing an annual award for the best street façade erected during the year. Mr. J. W. Simpson, the President of the Institute, in an address to the members in July, 1919, made a statement on the subject, in the course of which he said that at the instance of the late president he had drafted for consideration a proposal for offering a bronze medal every year for the best street façade. A similar award is made by the Corporation of Paris, which recognises the owner of the property premiated, as well as its designer, by an abatement of one-half of all frontage dues. In a letter to the *Times* last week, Mr. Walter Cave, Chairman of the Art Standing Committee of the Institute, says that since Mr. Simpson's address a detailed scheme has been prepared by the Art Standing Committee, which is now in communication with the London County Council and the Corporation of the City of London in the hope of obtaining their support. There is good reason to hope, therefore, that within a few months the example of Paris will have been followed in London.

Our Provincial Art Galleries.

There has grown up as part of the changes which have resulted from the war a challenge to much that was formerly accorded respect, and our provincial art galleries are coming under a good deal of criticism at the present time. It is felt that the necessity exists for a revision of the decisions which have led to the acceptance of many pictures of now very discredited reputation, and which have no business to occupy space, which should either be occupied by better art or not be occupied at all. The decisions of local art committees have been embarrassed in the past by the gifts of prominent citizens, and they have accepted pictures as gifts because they were offered, not because they ought to have been accepted. It is a legacy of that Victorian fetish which found in the possession of money all the virtues and all the gifts. As a consequence, our provincial galleries are stocked with a considerable percentage of mediocre canvases of the dull professional kind, quite unfitted for the purpose of a permanent collection. Their presence in our public galleries is all the time a darkening of knowledge and an obstruction to the prospects of art. If anyone is inclined to be pessimistic over the art of the present a visit to some of our provincial galleries will cure him.

Wages and Housing.

The time must inevitably come when wages will have to be based on economic principles in relation to the services rendered and the value of the product of those services in the open market. At present wages are affected by many other considerations, such as statutory interference, unemployed donations, war bonus, and so on, but when they come to be settled on economic principles the question of housing will surely have to be taken into consideration. Standard wages are fixed without regard to this question, but now that the local authorities, aided by the State, are providing houses at less than cost price certain persons taking these houses are in reality receiving a very considerable subsidy. We have before us the actual figures in a certain borough. The houses are being erected at a cost of £930, and are to be let at a weekly rental of 8s. These houses will be occupied by persons in all sorts of occupations, some receiving very high wages, but the rents cannot be differentiated according to the wages of the tenant. It is clear, however, that the tenant is being subsidised by the taxpayers and ratepayers to the extent of 12s. or 14s. a week in rent. We will say a railwayman in a high grade takes one of these houses. His wages are standardised, and at the next strike the figures will be given of his actual wages. But what of the subsidy in rent given to him by the taxpayers and ratepayers? We only take this imaginary case to illustrate the serious evils of the present housing schemes. Why should the tenants of new houses receive such a subsidy, and how is it to be taken into consideration economically? The scheme is unfair to individuals; one man is assisted in his rent whilst another is not. It is unfair to the



Church of St. Vincent Ferrer, New York. Mr. B. G. Goodhue, Architect.

taxpayers and ratepayers, and whilst rent and the cost of living are elements being taken into consideration in fixing rates of wages it is also economically unsound.

The Ricker Library, Illinois.

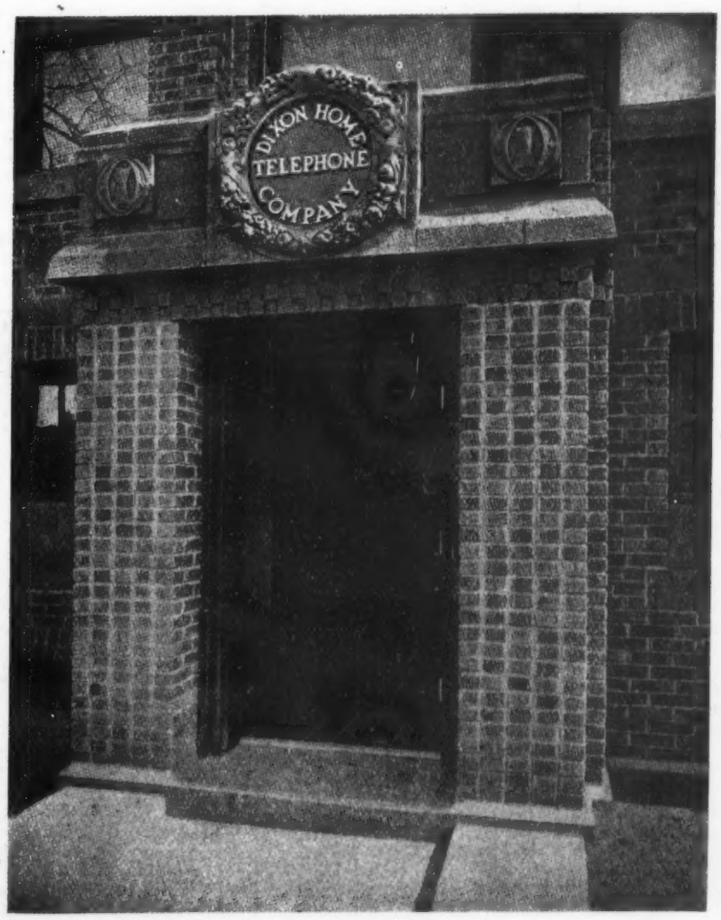
If architectural students in America lack the advantage of study direct from the best buildings in the world, such as the old houses and cathedrals in England, they have at least a ready access to some of the finest libraries that have ever been brought together. An example of this is in the Ricker Library in the University of Illinois, with its 8,000 volumes arranged in open stacks and cases in one large, well-lighted hall, where nothing is locked up and they may brouse at will. And, just as Mr. Dircks has lately given some indication of the treasures in the R.I.B.A. library, so Mr. N. C. Curtis has written an admirable guide to the contents of the great Ricker Library of Architecture, which we have just received. To have access to a fine library is one thing—to be able to use it to one's personal advantage is another. Mr. Curtis carries us through the centuries in a very clear and graphic manner, from the oldest book on architecture, the *Architecture* of Vitruvius, and other early writers—Alberti, Palladio, Vignola, Scamozzi, Piranesi, and Du Cerceau—down to the nineteenth century. Just as there are few German books which have much vital value in the study of architecture, the French books yield rich returns, and Mr. Curtis emphasises this in his praise of Letarouilly's "Les Edifices de Rome Moderne," which, he says, is "assuredly the most useful and beautiful work ever offered either to student or practician" for inspiration. Though the little pamphlet before us is only a summary it has a distinct value for students, and one would like to see similar summaries from English students and practitioners as to what books have proved the most serviceable to them.

Factors Influencin the Cost of Living.

The cost of living and factors which govern prices was a subject on which Mr. R. McKenna made some plain statements at a conference held under the auspices of the Industrial League and Council. The problem which was the subject of debate was "Stability of Contracts a Necessary Factor in Industry," and Mr. McKenna urged that in order to know how to secure this stability they must first examine what it was which caused fluctuation in prices. He had come to the conclusion that the factors which governed prices were production, total purchasing power, and the amount of the national income which was spent on consumption. Production depended alike on employers and employed. With wise and energetic and able employers, and with employees working to the utmost of their power, they would get a maximum of production and lower prices. The lecturer, in concluding an able address, made some pertinent remarks on the Income Tax. The Income Tax was 6s. in the pound, and the 6s. was drawn not only from everybody's income, but from the whole of the profits earned by every business. Part of the profits of business should be put every year to a Reserve Fund. They would not be in a position to compete with foreign rivals unless a considerable part of the profits of business were put back in reserve in order to build up the industry. When the tax collector took money from business it was largely taken from savings and spent on consumption, and there was in that increased expenditure on consumption one of the strongest factors leading to high prices. If his conclusions were right, it was really within the power of the nation to get stable prices, and if they got stable prices they would then be able to sell abroad. The most urgent need of this country at the present moment was economy and efficiency. They could then have a good standard of living for the workman and real hope for the future. They must first re-establish their industry before they could begin their social reconstruction, and when they had done this they would attain a much higher plane than they had ever reached yet.

Huts in the Parks.

It would be unfair to criticise the retention of the huts in the parks for so long after the war without realising all the difficulties which beset the authorities, but perhaps many of those who are growing so impatient of the delay in clearing out the huts happen to know more than the general public.



From the *American Architect.*

Main Entrance, Dixon Home Telephone Co. Building, Dixon, U.S.A.

Mr. N. Max Dunning, Architect.

GENERAL NEWS.

Professional Announcements.

Mr. F. Milton Cashmore, A.R.I.B.A., M.S.A., has removed to 15, Waterloo-place, Pall Mall, S.W. 1. Telephone: Gerrard 1,293.

After April 15, the address of Mr. Geo. W. Grey, F.S.I., of 48, Cranbourn-street, W.C.2, will be Public Works Department, c/o The Colonial Secretary, Straits Settlements, Singapore.

Mr. Ernest G. Allen, F.R.I.B.A., of 4, Arundel-street, W.C.2, has taken into partnership Mr. David Millen and Mr. Alfred R. Potter, who have both been associated with him for a number of years.

Appointment.

Mr. H. R. Collins, A.R.I.B.A., of Cambridge, has been appointed architectural assistant in the Department of the Chester City Engineer and Surveyor.

The Building Trades Exhibition.

The Concrete Institute has arranged the following fixtures for the forthcoming International Building Trades Exhibition at Olympia. On Wednesday, April 13, an official visit will be made, members assembling in the Princes' Room at 1.45 p.m. for 2.0 p.m. Parties of members will be conducted round the exhibition by appointed guides, under the direction of Mr. A. Alban H. Scott, M.C.I. Arrangements have also been made for Mr. H. Kempton Dyson, M.C.I., to give a lecture at 4.30 p.m. on the same afternoon, in the Lecture Hall, dealing with "Building in Concrete." It is intended also to have a luncheon at the Exhibition on Tuesday, April 19, at 1.30 p.m. The Right Hon. Christopher Addison, M.P., and Mr. G. Topham Forrest, F.R.I.B.A., Hon. M.C.I. (Superintending Architect to the London County Council), will be the chief guests. After the luncheon, Mr. A. Alban H. Scott will speak on "Building By-laws and Regulations." A visit has been arranged for Saturday, April 16, by the courtesy of the architects, Messrs. Herbert O. Ellis & Clarke, to the new reinforced concrete premises being erected in Sumner-street, Southwark; members will assemble at 3.0 p.m.

The Artistic Development of the City.

In the Court of Common Council, on Thursday last week, Mr. Deputy Millar Wilkinson asked the Chief Commoner if his attention had been called to the articles and letters in the *Times* with reference to the establishment of a Committee of Taste, or a Ministry, or some other authority, to deal with the artistic aspect of the City, and if he could give any information on the matter. Mr. J. R. Pakeman, C.B.E., answering the question in the absence of the Chief Commoner, said the Corporation's attention had been called to the subject long before the articles appeared. In July last, Mr. Deputy Bird moved the following resolution: "That it be referred to the City Lands Committee to consider and report to this Court as to what steps should be taken for the artistic and architectural development of this City, and for the preservation and permanent indication of premises of antiquarian and historical importance." The Court agreed, and the matter was now under consideration by the City Lands Committee. The present Chief Commoner and the City Surveyor were both members of the Council of the Royal Institute of British Architects, and were in touch with that body with regard to the point raised. The City Lands Committee had already received a deputation from the Institute with reference to a branch of the important subject, and the Corporation had the matter well in hand.

MEETINGS.

Monday, *April* 4.

Royal Institute of British Architects.—Sir Lawrence Weaver on "The Land Settlement Building Work of the Ministry of Agriculture and Fisheries." At 9, Conduit-street, W.1. 8.30 p.m.

Tuesday, *April* 5.

Liverpool Architectural Society. — Annual General Meeting and President's Address. At 13, Harrington-street, Liverpool. 6 p.m.

Institution of Civil Engineers.—Mr. L. H. Larmuth on "Airship Sheds and Their Erection." At Great George-street, S.W.1. 5.30 p.m.

Junior Institution of Engineers.—Mr. H. W. Martin on "The Evolution of the Castle." At Chamber of Commerce, New-street, Birmingham. 7 p.m.

Thursday, *April* 7.

Edinburgh Architectural Association.—Visit to Leith.

COMPETITION NEWS.

Glasgow.

For the High School of Glasgow.—Designs for a war memorial. Sending-in day, March 31. (See advertisement December 31.)

Campbeltown.

For the War Memorial Committee.—Designs for a war memorial. Sending-in day, April 8 (see advertisement Feb. 4).

Queensbury.

For the War Memorial Committee.—Designs for a war memorial, to cost about £800. Further particulars from the Secretary, Council Offices, Queensbury, Yorks. (Banned by the R.I.B.A. and Society of Architects)

Chauny.

The Municipality of Chauny (Aisne) invites plans from architects and engineers in France and Allied Countries for (1) a water supply for the town, and (2) a drainage system. Sending-in day, June 10. (See our issue for March 11.)

Renfrew.

For the War Memorial Committee.—Designs for a war memorial, to cost up to £1,200. The author of the design placed first will receive the commission to carry out the work, and a second premium of £10 will be awarded. Sending-in day, April 9. Further particulars from Mr. A. R. Harper, Town Clerk, Renfrew.

Members of the R.I.B.A. and the Society of Architects are requested not to take part in this competition until the conditions have been revised.

East Ham Hospital.

The authors of the design placed third in the East Ham War Memorial Competition are Messrs. S. N. Cooke, F.R.I.B.A., and W. N. Twist, F.R.I.B.A., of 83, Colmore-row, Birmingham.

Salisbury.

For the War Memorial Committee.—Designs for a war memorial. Sending-in day June 2. (See advertisement this week.)

Rowlands Gill War Memorial.

The design of Mr. William Donaldson, sculptor, of Newcastle, has been accepted for a granite war memorial to be erected at Rowlands Gill.

From the *American Architect*.

Aerial view of the Lincoln Memorial, Washington. Mr. Henry Bacon, Architect.

[Other illustrations of the Lincoln Memorial were given in our issue for March 4.]

CORRESPONDENCE.

Competition for a Licensed House.

Sir,—Allow me to make a few comments on the competition designs for a licensed house for the Worshipful Company of Brewers, on view at the R.I.B.A.

What must most forcibly strike everyone acquainted with the subject is the complete ignorance of, or disregard for, the problems connected with the running of such premises displayed by the majority of competitors, and particularly the authors of the premiated designs. It is evident from the "instructions to architects competing" that what was desired by the promoters of the competition was a design for an improved public house, but, as one of them remarked in my hearing, the majority of the schemes submitted create the impression that a town hall was the subject of the competition.

All the premiated designs have one fault in common, namely, that an unnecessarily large vestibule giving access to the refreshment and club rooms contains also the staircase to the upper part of the house and another leading to the men's lavatory situated in the basement. Such an arrangement would necessitate the constant presence of a hall porter and lavatory attendant, of whom no mention is made in the "instructions." Experience has, however, proved that the arrangement in question is impossible without these additional attendants, as the vestibule would become a meeting-place for all kinds of undesirable individuals—some of whom would pay most unwelcome visits to the private portions of the house via the unguarded staircase—while the lavatory would soon become a public urinal, and a filthy one at that.

Another serious fault is the size of the service bars. In the designs placed first and second these give the impression of being intended for dancing rather than the service of refreshments. What four attendants—the number mentioned in the "instructions"—are to do with all this space is a conundrum. It would also be beyond their power adequately to serve the great lengths of counter shown.

Another point which has not received adequate attention is the question of supervision in the bar proper, or "club room." It is most essential that the attendants behind the counter should be able to see what is going on in every part of such rooms. In the prize-winning schemes this is not possible.

The yard, which was evidently intended by the promoters to allow of drays driving in when delivering beer, &c., is too narrow in all the premiated schemes for vehicles to turn round.

The design placed first has, in addition to the above, a couple of objectionable features all to itself. One is that the room for cleaning trade utensils is in the basement, off an area, which means that these utensils every time they are to be cleaned have to be carried from the bar, across the yard, down a flight of stairs, and back again. The other, much worse, is that the upper part of stairs leading to the assembly room is without a window, obtaining only borrowed light through a cloak room!

Although by no means exhausting the list of faults in the premiated schemes, the above remarks will suffice to show that the result of the competition cannot be considered satisfactory.

A. E. Gurney.

Mr. Travers' Glass.

Sir,—As architect of the Church of St. Andrew, Catford, I can, perhaps, add a few pertinent remarks to those in your issue for March 11. Considerations of cost were necessarily paramount, and Mr. Travers and I have been in close collaboration over both the conception and its execution. The red, to which you refer, will not be too strident when the window is fixed, as there is rather too much red in the church to allow of it "telling" as it does in a studio.

This great east window was designed originally for just such a scheme as Mr. Travers has very happily worked out—a completion of the *motif* set by the original idea for the altar and reredos. The present inadequate reredos will, I hope, soon be replaced by my triumphant note from Revelations (with a good deal of mother-of-pearl and enamel enrichment).

The subject of the window is the Regnant Christ, with the River of Life and various warrior-saints with their semi-heraldic emblems on banners making a strong line of colour over their (about life-size) figures. Plain grey-green quarries in the four side-lights provide an excellent contrast and, in the tracery, will be noted various emblems of the Passion. I believe that this work will be one of the finest modern windows extant, and it is entirely due to Mr. Travers' consummate craftsmanship and spiritual conception.

The following Shakespearian sonnet may be of interest, as, to my mind, it hits the nail on the head, which your leader on memorials in a recent issue did not do, viz., that the failure of many memorials is due to the absence of faith—hence lack of inspiration, and that vivifying quality ever found in the best old work :—

Their name liveth evermore, for they gave
their all.

Aloft the fire-light eastern window calls
Insistently, that those who fell to rise
Shall live in glorious memorials
To exemplify The Greatest Sacrifice.

No simple parchment palimpsest of names!
No churchyard mason's mediocrity!
We have a pious care that none defames
The happy Dead with what is fulsome, pretty.

Grief's sting dies in beauteous sanctities—
Translucent, joyous, yet ethereal;
Then add strange dignity, for where God is
Death enters not, but Peace celestial.

And, blessing all, a Regnant Christ behold
On high—"A life to give—a faith to hold."

I may just add that my recent additions to this church include a processional Cross in oxydised silver and enamels, and the external war memorial in the form of a severe Celtic cross and two stelæ with names. The latter was executed by Messrs. J. Daymond & Son, of Westminster, and the former by Miss Graham, of Globe Studios, Chelsea.

P. A. Robson.

Manchester and Westminster.

Increase of Output in the Building Trade.

Sir,—In reference to the bonus systems referred to in my paper on "The Measure of Output in Building" (*The Builder*, March 25 and April 1), it is true these bonus systems have, in general, led to an increase in output, but at a cost of much friction and misunderstanding. The workers levy the complaint that they have increased output, but have not been correspondingly recompensed. The building trade should be on its guard against making such an initial mistake, and before putting into operation a "bonus system" on output should ascertain to within a degree of accuracy what is the time taken on an average for any unit of work. When the Master Builders' Federation has decided and agreed upon these constants of labour, they should then be submitted to the workers for their approval. By these means it is reasonable to assume, after agreement between the employers and employees, they would form the basis of equitable rate-fixing—whether upon terms that would seek to limit earnings to a time-and-a-third at day-work rate, or upon such other terms that would give more or less, or permit of unlimited earnings according to the degree of skill of the worker or group of workers, is a matter that should be decided before a bonus system is adopted in the trade and put into general practice.

Should a bonus system be adopted on the lines indicated in my paper, it should be determined beforehand as to how the individual and group bonuses are to be paid, whether weekly or on the completion of the job. Again, the collective and individual merit bonus could be paid at periodical intervals, either monthly, quarterly, half-yearly, or yearly, as may be agreed upon. Anyhow, these are matters that could be agreed upon in conference, and in the first instance it is advisable that they should be of an elastic nature during the experimental stage so as to allow of modification and render them easy of adjustment later.

The aim should be towards allaying the suspicions of the trade unions in general with reference to the inauguration of payment by results, meeting their objections by candour, and putting before them facts in a clear and convincing manner, treating them with confidence and by just and fair dealings. Among the objections trade unions have to payment by results are the arbitrary power of rate-fixers and the varying rates, even in the same area, for the same class of work. One barrier that stands out more than any other against payment by results in the building trade is the fact that the master builders have nothing tangible to put before the trade unions in the way of what is the time occupied per given unit of output. No serious attempt of any importance has been made by the trade generally to ascertain these.

Therefore, the foremost thing required of the trade is to see that this is done without delay. This can only be done by the aid of costing. To this end they will have to rely upon the goodwill of the quantity surveyors, who should pull along with the builders. Any customs or usages that stand in the way must be swept aside without compunction.

T. Sumner Smith.

Gallipoli Memorial.

Sir,—Apropos of the announcement that General Sir Aylmer Hunter Weston is proceeding to Gallipoli, where he will confer with Admiral Sir John de Robeck upon the selection of a site for the proposed memorial, I think a statement appeared a little time ago that a design for this by an officer of the Royal Navy had been approved.

No doubt this will be an excellent one in every way, the well-known appellation bestowed upon Naval men being so well earned, but again the graceful thing that might have been done has been passed by.

Perhaps this so far away question will leave many hearts cold, but ex-Service architects who served there in the Navy and Army could not have failed to put sympathy and feeling into their work, had they had the opportunity of offering their services (once again) in a competition for a memorial no less deserving of the best than that at Zeebrugge.

Percy Bartlett.

The Drawings of the Late H. W. Brewer.

Sir,—In your issue for March 25 notice was given of the pending lecture on the above, which should prove very interesting. During the 50 years I have been reading *The Builder* I do not remember a more enthusiastic contributor than Mr. Brewer. Like the Pugins, he was a Catholic, and devoted his life to ecclesiastical architecture, chiefly in the Gothic style. One of his very fine drawings, "A Monastic Suburb of Old London in the Sixteenth Century," was published in *The Builder* for January 1, 1898. It embraces the principal churches, from Ely-place to St. John's Priory, Clerkenwell, and from the Charterhouse, and St. Bartholomew-the-Great, to Aldersgate.

Edward Vale.

Weston-super-Mare.

[*** The drawing referred to, "A Monastic Suburb of Old London in the Sixteenth Century," will be shown on the screen during Mr. H. A. Cox's lecture at Olympia during the Building Trades Exhibition, on April 14, at 3 p.m.—Ed.]

[Owing to pressure on our space, other letters are unavoidably held over until next week.—Ed.]

SOME NOTES ON AUDITORIA FOR LARGE CHOIRS—II.

By H. Bagenal, A.R.I.B.A.

Worcester Cathedral.

In the notes on the acoustics of the Crystal Palace as an auditorium (*The Builder*, January 7) the point emphasised was the apparently short reverberation for so large a volume. The reverberation by Sabine's law varies directly as the volume. Even within strict limits the utilised volume of the Crystal Palace was considerably greater than that of Worcester Cathedral, but in comparing the Handel Festival with the Worcester Festival the extreme symptoms of reverberation were noticeable in the latter only. By the same law reverberation varies inversely as the amount of absorbents present. But the relation of audience to volume was considerably more useful in the case of the Cathedral. The relation in the case of the Crystal Palace was almost negligible. The explanation, as previously suggested, lies in the relatively high absorbing power of glass walls as compared with walls of solid masonry. Even a slight difference in the relative absorbing power of the plain wall will in such cases make a vast difference in the energy absorbed, owing to the fact of its large relative extent and that the great majority of impacts must occur at its surface. A Gothic cathedral church has an enormous surface of masonry walling—that is to say, of hard, rigid surface, non-porous and non-transmitting. To arrive at a rough comparison between its reflecting and absorbing surfaces it is necessary only to compare its floor area with the sum of the areas of its walls and vault. It is not surprising, therefore, that the acoustic conditions of the Crystal Palace as an auditorium approached more nearly to open-air conditions, while those of Worcester Cathedral, in spite of an audience of two thousand, approached more nearly to empty room conditions.

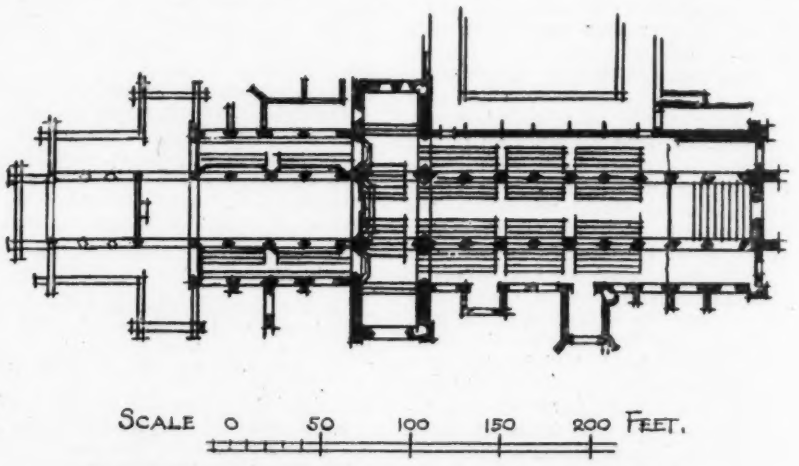
"Empty room conditions," however, are not wholly bad. They ensure a first requisite—an adequate intensity of sound. During Worcester Festival nothing was more remarkable than the general *loudness* of instruments and combinations at the remotest seats, shielded from the source of sound by many pillars and corners. The choir and orchestra occupied the two westernmost bays of the nave and were accommodated on a timber dais and platform. The platform was about 5 ft. high and the top seats of the choir reached to within a few feet of triforium level. The advantage of this position is that the west wall and window act as a reflecting surface behind the source of sound. The use of the canvas between the mullions of the west window was, however, not useful for this purpose, whereas match-boarding or mill-boarding would have contributed to the reflecting effect. The parts of the cathedral used as an auditorium were the remainder of the nave with nave aisles, the crossing with front seats in main transepts, and the choir aisles. The seats were set parallel to the axis of the church with a gangway down the centre, so that the audience were in two halves facing each other.

The absorbing material present consisted of the audience (about 2,000 persons), cord matting on the gangways, and some hair felt on the orchestra platforms. Of these absorbents the only factor of value was the audience. The felt on the platform was doubtless for the purpose of deadening the footsteps and movements of the performers, and as such was useful. There is no doubt that this total absorbing power was inadequate, and that from all points of view the musical effect would have been improved by introducing twice the amount. The redundancy by ear was between three and four seconds. This compared with St. Paul's was good, but it was sufficient to ruin the French symphony and to spoil many of the tempo effects in the "Elijah" and staccato passages generally at a greater distance than fifty feet from the source of sound. A certain drag was also noticeable in some of the works by modern composers, who are not bred to consider the difference between church and concert-room. The difference is, of course, that in the church tone will tend to be enhanced, while rhythm and progression require the most careful and conscious management. The church, with its enormous air volume, is itself an instrument to tone, but the fact that all sounds slowly fade rather than stop as soon as the source has ceased means that the movement of phrases has to be slower though not less complicated; and means that the inevitable crescendo and diminuendo due to reverberation must be allowed for in the rendering, if not in the composing.

If it is maintained that concert-room conditions are inevitably presupposed by the modern composer, and if cathedrals are used instead of concert-rooms as auditoria, care should be taken to shorten their reverberation as much as is possible with the means at disposal. The rule evolved from the Harvard experiments and later American practice should be applied, namely, resonant material should be placed near the source of sound and absorbing material in the rear of the audience in the neighbourhood of the back seats. At the Crystal Palace a great factor in controlling reverberation was the large timber hood over the chorus acting as a resonator. The value of wood is that it is an absorbent which under certain conditions acts as a secondary source of sound, so long as, and only so long as, the primary source is sounding. As soon as the primary source ceases to sound it again becomes an absorbent active against reverberation. This is the meaning of resonance in applied acoustics. Wood as a resonant material reinforces the sound when reinforcement is required, and absorbs it when absorption is required.

In Worcester Cathedral the timber forming the platform and dais had a slight resonant value but an active resonator for a wide range of pitch can only be formed by a thin wood surface of some considerable extent placed in a position of maximum concentration of sound. Such a resonator might have been formed in three-ply or matching, and placed spanning the nave at clerestory level, inclined at an angle easily calculated for maximum efficiency. Absorbing material also can be placed either in a position of maximum efficiency or in a position where its efficiency is reduced to a minimum. Absorbing material on the rear wall behind the audience is, of course, designed to destroy the dangerous longitudinal reflections which are bound to occur. In the case we are considering, a heavy curtain across the chancel-opening in front of or behind the screen, would have filled that *role*, but would have prevented the use of the chancel aisle seats. A thick canvas velarium hung horizontally in the vault of the crossing would have been useful, but unsightly. But it cannot be too much emphasised that the absence in a cathedral of anything corresponding to the large ramped and upholstered galleries found in concert-room and opera-house means a serious loss, and ought to be compensated for on a large scale. Perhaps the most useful thing possible in a cathedral like Worcester where triennial music meetings are held would be to replace gradually the sandstone or tufa panels of the vault between the ribs with American acoustic tiles, employed now in modern Gothic work in the States. They would not be noticeable at that height, and would be of incalculable value in the vault as an absorbent for the cathedral music at all times.

Besides the advantages gained in accuracy of rendering by the reduction of the reverberation, there are other advantages to be had from the presence of absorbing material. I have said that the property of the large church as an auditorium is to enhance tone,



Plan of Worcester Cathedral, arranged for the Festival.

but this is not the case where brass instruments or solo men's voices are concerned. The harshness of the brass was noticeable pretty consistently in all parts of the cathedral. The roughness of the male solo voices when heard within fifty feet was noticeable to any listener accustomed to hearing the same voices under concert-room or opera-house conditions. The reason is not far to seek. The acoustic difference between the cathedral auditorium and the opera-house auditorium, assuming audience factors equal, is the fact that the opera-house has a large area of hangings, curtains and upholstered seats. Now, the curves established by the Harvard experiments show that fabrics up to two centimetres thick absorb in the upper registers between C_4 (512) and C_7 four times as much as in the lower between C_2 and C_4. This means that considerable elimination of overtones occurs for basses and tenors when curtains and hangings are present, which does not occur when they are absent. The curve of absorption for an audience shows a much more even though by no means uniform distribution of absorption over the whole range. (See "Proceedings of the American Academy of Arts and Sciences," Vol. 42, No. 2.) It can be understood, therefore, that the quality of male voices must be considerably modified by a change from concert-room or opera-house conditions to the extreme opposite of the cathedral. From the same curves it can readily be seen that a modification to such a degree does not occur in the case of soprano or alto voices. As far as theory goes, there is no doubt as to the principles that should be followed in preparing a cathedral as an auditorium. First, a limb of the church should be screened off for the purpose by curtains, thus limiting the useful air volume and providing a certain initial absorbing power in the curtains themselves; second, a due area of resonant material in the form of wood should be provided near the source of sound; and third, the reverberation should be reduced to an agreed number of seconds by means of further curtains hung at strategic points which would also serve to sweeten the male solo voices and the brass instruments.

ARCHITECTURAL SOCIETIES.

GLOUCESTERSHIRE ARCHITECTURAL ASSOCIATION.

Somerset Towers.

Under the auspices of the Gloucestershire Architectural Association, a lecture was given at the Guildhall, Gloucester, last week, by Mr. C. F. W. Dening, F.R.I.B.A., R.W.A., on "Somerset Towers." The President of the Association (Mr. S. H. Healing) occupied the chair.

Mr. Dening said his lecture would deal largely with the Perpendicular period of English architecture, a period which had been regarded as very debased—why he did not know. A notable feature of the Somerset churches was the prominence given to the tower, and the fact that in a very large proportion of the churches the tower was built at the west end. Practically all the towers had buttresses, more or less massive, a provision unnecessary for the support of the masonry, but included in order to satisfy the eye, which demanded the suggestion of strength in the lower stages of a tower. Mr. Dening showed a series of slides, the towers being classified into groups—with three windows in the top stage, two windows in the top stage, a single window in the top stage, one long stage, two smaller stages, and two long stages conjoined.

The President moved a hearty vote of thanks to Mr. Dening, which was seconded by Mr. Walter Wood, who said there was in the south transept of Gloucester Cathedral evidence of transformation from the Decorative to the Perpendicular style of architecture. Some of the towers of Gloucestershire churches were similar in design to those Mr. Dening had shown.

NORTHERN ARCHITECTURAL ASSOCIATION.

Faults of Modern Architecture.

"Faults of Modern Architecture" was the title of a lecture delivered by Prof. A. E. Richardson, F.R.I.B.A., before the Northern Architectural Association, at Newcastle, on March 23. The chair was occupied by Mr. C. E. Errington (President).

In the course of his lecture, Prof. Richardson said throughout the history of art there had been symptoms of distress, resulting from inertia, from apathy, from decadence, or from various other causes, the origin of which had been obscured in the passing of years and centuries. Architecture could be divided into five classes, giving first place to domestic work. The building of houses, whether for the rich or the poor, whilst not in the first rank as a measure of expressing the ambitions of a people, in this country deservedly held a high place in the public esteem. With the exception of the Americans, the English had extended and developed domestic comfort and convenience to a standard unapproached by any other country. Experimental nonsense had been changed by the war. An observance of discipline and uniformity had been contributed to by the need for great economy, by the high cost of materials, and other causes, accomplishing more in the way of bringing domestic architecture into a restrained mood than a thousand lectures on the subject.

Thirty years ago, when a number of new town halls were designed, the architects appeared to consider that a mild version of English Classic would meet the case, and there was a great amount of timidity in this decision. The faults of modern design were most noticeable when rebuilding business streets and centres of commerce. Architects were not wholly to blame, because they were obliged by modern conditions to erect buildings on a scale unsuited to the width of the existing streets. Also, they feared competition, and there was a third factor, namely, that there existed no standard of test for such matters. However, conditions were improving, and simplicity, scholarship, logic, good taste, and reasoning would do much during the next decade to restore civic architecture in this country to the position it formerly held.

The lecture was illustrated with several lantern slides.

Photo: Aerofilms, Ltd.

Tewkesbury Abbey.

The greater portion of Tewkesbury Abbey Church dates from the Norman foundation of FitzHamon in 1087, during the abbacy of Geraldus. The Church was consecrated and dedicated to the Virgin in 1123, having been completed by Earl Robert, brother of Henry I. Between 1875 and 1879 the building underwent a thorough restoration by the late Sir G. G. Scott, and from that time sundry additions have been made (vide *The Builder*, December 1, 1894).]

THE REBUILDING OF DEVASTATED FRANCE—III.

THE CONGRESS OF MAYORS OF THE "LIBERATED REGIONS," AT COMPIEGNE.

By H. P. Cart de Lafontaine, Member of the Commission Technique de la Renaissance des Cités.

The Congress of Mayors held at Compiègne, on October 27-29, 1920, was an event of considerable importance in the history of the devastated regions, as it marked the initiation of a new programme of organised effort in the solution of the problems resulting from the Town Planning Act of March 14, 1919. Through the kindness of M. Fournier-Sarlovèze (Deputé. Conseiller Général de l'Oise, and Mayor of Compiègne), the organiser of the Congress, I was able to take part in the proceedings in the dual capacity of a British architect and a delegate of *La Renaissance des Cités.* About forty mayors accepted the invitation, and many of them attended the congress, several being accompanied by their town clerks, municipal engineers, and other technical advisers.

An interesting discussion on the question of the claims for war damage took place previous to the opening meeting of the Congress. The Mayor of Compiègne, in reply to a question by the Mayor of Cambrai, said a *pro-forma* they had drawn up and submitted to M. Ogier (then Minister of the Liberated Regions) had been officially adopted. The idea of this *pro-forma* and the circular letter which accompanied it was that in place of the more or less vague and erroneous statement of war damages which was required by the Act of April 17, 1919, the Reparations Commission would (when these forms were completed and returned) have a total composed of what each *sinistré* thought he was entitled to in respect of war damage to his property. This, of course, would not be accurate, but it had the advantage of being a statement by those actually concerned, and was, to that extent, better than a statement which might or might not be something more than a good guess. Each applicant, when returning the form, had to forward a signed declaration stating that he agreed to furnish a detailed certified statement on or before March 1, 1921.

At the opening session of the Congress, after a brief address of welcome to the delegates and a few words of explanation as to the business on the agenda by the Mayor of Compiègne, the Mayor of Verdun was elected President, the Mayors of Arras and Reims, Vice-Presidents, and the Mayor of St. Mihiel, Secretary, and the Congress commenced the consideration of the first item on the agenda, viz., the expropriation of buildings damaged or destroyed during the war, rendered necessary by the application of the Town Planning Act of 1919.

Expropriation of destroyed and damaged Property.

In order to facilitate discussion and to keep it within the required limits the Committee had drafted a Bill embodying the amendments which appeared to be generally agreed as necessary to the proper operation of the Act of 1917.

The following is a translation of this draft Bill :—

Article 1.—Towns and *communes* of the liberated regions may proceed with the expropriation of house property completely destroyed or damaged by the events of the war, which are necessary to carry out their town-planning schemes.

Article 2.—Such compulsory purchases may be made either by agreement or in accordance with the provisions of the Act of May 3, 1841, on expropriations rendered necessary for works of public utility. The value of (war) damaged house property shall be assessed at the actual pre-war value of such property, *i.e.*, at the same rate as would have been allowed had the property remained in the same state as in 1914.

Article 3.—In cases where an agreement is arrived at with regard to acquisition or expropriation of such property, the amount of the war damage (due from the State) shall be compulsorily paid to the *communes*, and the amount shall be fixed previous to such acquisition or sale taking place, by two experts—one nominated by the State and the other selected by the municipal authority. Should any dispute arise the Tribunal of War Damages will appoint a third expert who will act as arbitrator, and whose decision shall be binding on both parties.

Article 4.—The *communes* will benefit by the amount of the war damages so fixed. As soon as the acquisition of one or more buildings, condemned for street widenings, damaged or destroyed by war, has been completed and definitely approved by the Prefectoral authority they shall be entitled to immediate payment from the Ministry of the Liberated Regions of the total amount of war damages as fixed by Article 3. They may use these moneys to pay the compensation due to the proprietors of condemned property, and the balance, if any, will be reserved by them for the general improvement of the communal property and the realisation of the town-planning schemes prepared under the Act of March 14, 1919.

Article 5.—In cases where total destruction of buildings has resulted from the war, *communes* may proceed with the expropriation of the site on which those buildings previously stood. The value of such sites will be assessed either by agreement with the owners or by the *jury d'expropriation.* The owners of such sites shall retain their right to claim war damages for the re-erection of their property*, save only if they consent to cede to the towns this right and claim for the expropriated buildings at the value at which they were assessed before destruction by the war. Towns and *communes* will, in the latter case, also have the right to claim the total amount of the war damage claim, to enable them to pay for the value of the expropriated sites, and sums due (by the State) for the rebuilding of such property, which right to rebuilding has been made over to them.

Article 6.—If such expropriations by towns for improvements and street widenings of war-damaged buildings result in the suppression or removal of an established business (*déplacement ou suppression des fonds de commerce qui y sont exploités*) the compensation due to the owners will be calculated on the following basis :—

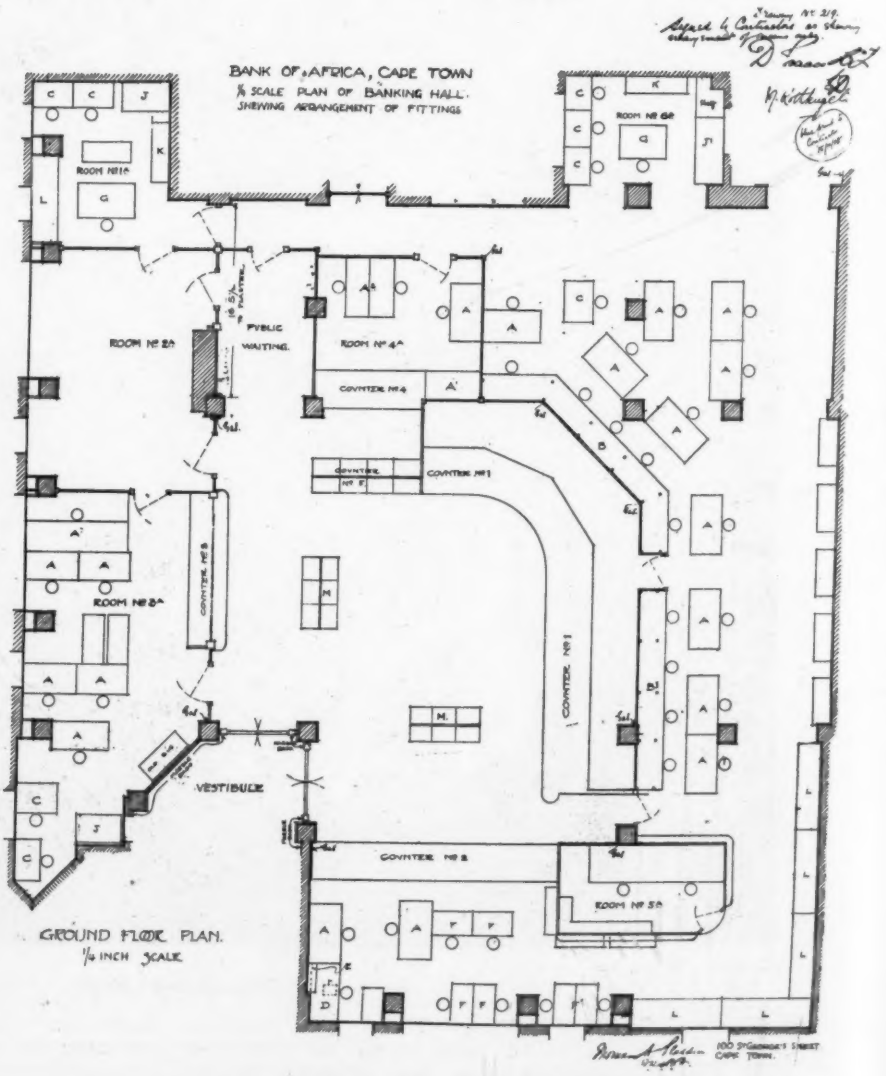
(*a*) Ten per cent. of the capital value of the stock of the re-established business (*i.e.*, re-established after the war) for each year still remaining to run in the tenancy of the premises expropriated, up to a maximum of 50 per cent. of the total capital value of the re-established business.

(*b*) In case of an increase in the value of the stock-in-trade of the business when re-established, the indemnity will be calculated as before, plus an addition in proportion to the mean of the profits of the three years preceding the declaration of war, of which the amount shall be fixed either by agreement or by experts.

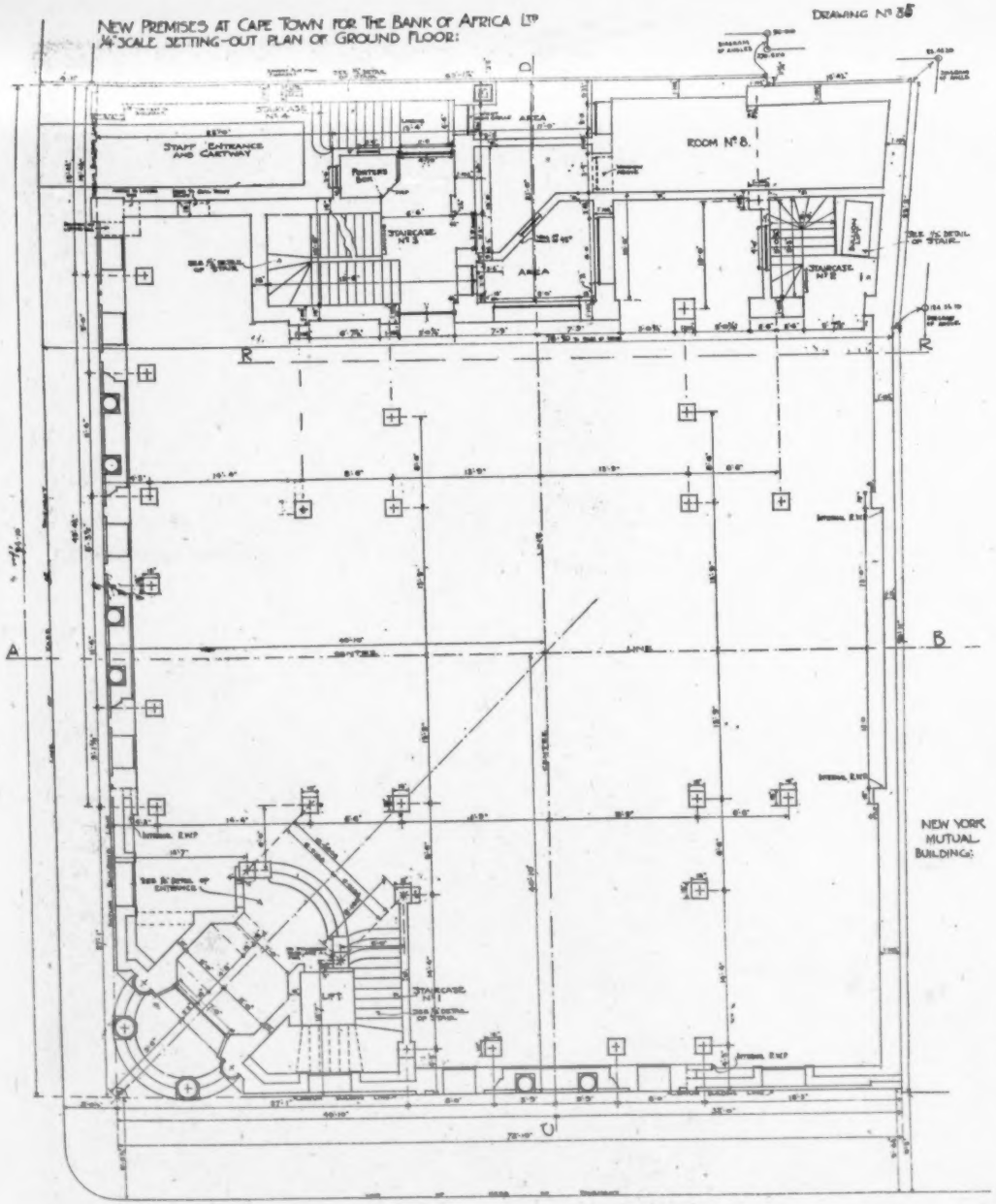
(*c*) In the case of business, capital, goodwill, etc., the value of which cannot be determined in accordance with the conditions proposed in the preceding paragraphs, the indemnity for removal will be settled by experts.

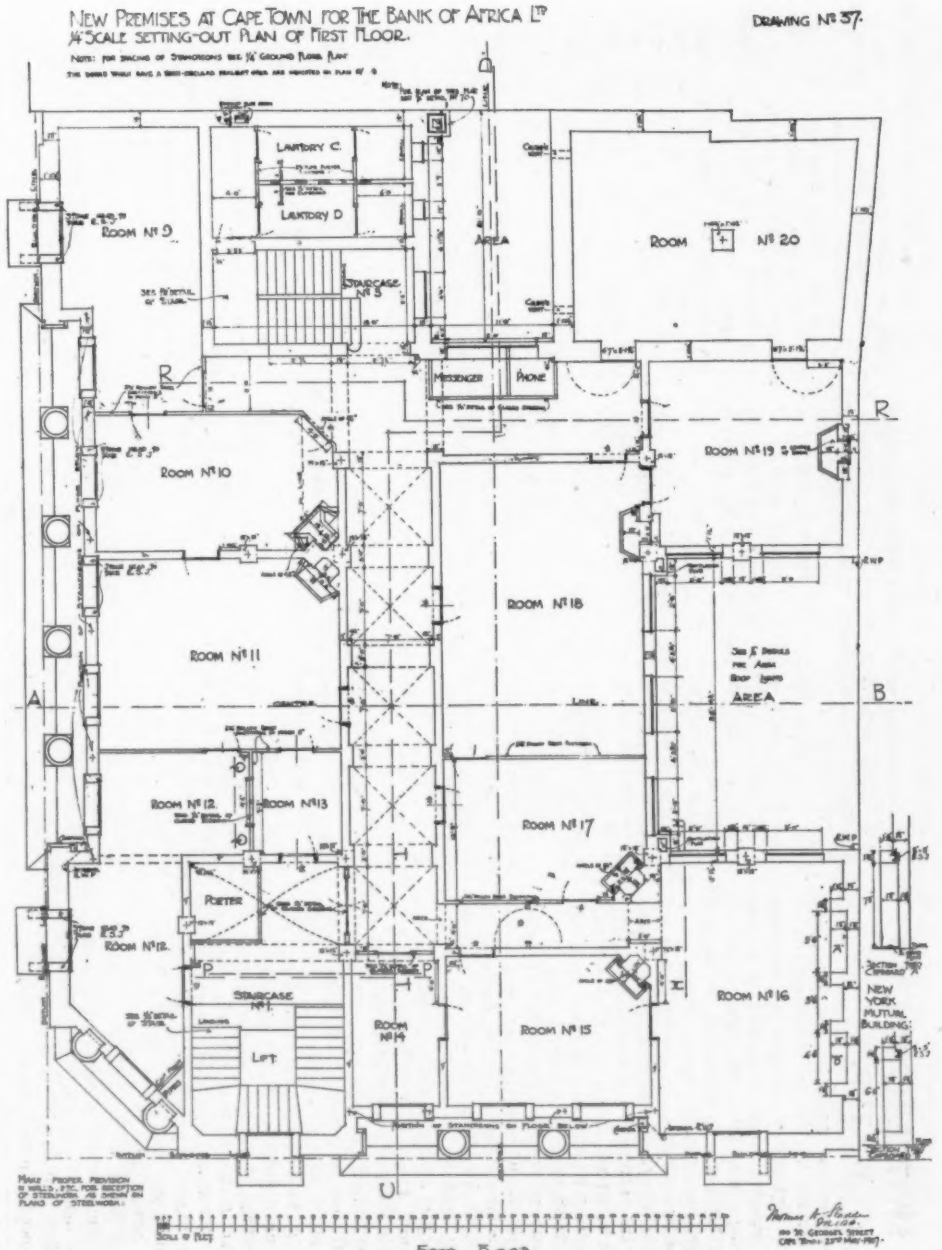
Article 7.—*Communes* shall have the right to delay the demolition of buildings required (under the conditions set out in the preceding articles) until the expiry of the leases held by tenants.

* This refers to a special clause under which the owner is entitled to compensation if rebuilding within 50 km. of original site.



The Bank of Africa, Cape Town: Banking Hall.
Mr. Thomas Sladdin, F.R.I.B.A., Architect. (*See p.* 405.)





The Bank of Africa, Cape Town. MR. THOMAS SLADDIN, F.R.I.B.A., Architect. (*See page* 405.)

TO SWITZERLAND BY WATER.

FAR from the sea, with no sea ports and having no outlet to the sea, Switzerland is economically dependent on the surrounding Powers in regard to her import and export trade. During the war, the only neutral country entirely cut off by the two belligerent groups of nations, she had great difficulty in obtaining the wherewithal for the feeding of her people, and for the maintenance of her factories. To prevent the recurrence of such a condition, and to assure to herself the right to trade with all nations without restrictions, is her aim in maintaining the freedom of the Rhine, and of all great international rivers. The rights of Switzerland in so doing, and the pros and cons of the proposed Koechlin scheme for the building of a lateral canal on the Rhine, are well set forth in an interesting book which has just reached us.*

The building of such a canal from Strassburg to Basle would mean that Strassburg would have complete control over the traffic both to and from Switzerland by this great waterway, and it would not only prove detrimental to Switzerland but to all nations trading with her. The building of the canal would prove far more costly than the regulation of the open Rhine, and the expenses of repair and maintenance, the supervision of the necessary locks, and the time spent in operating them would be important factors to be taken into consideration. It is estimated that the regulation of the Upper Rhine from Strassburg to Basle would cost approximately from 30 to 40 million francs, whereas the construction of the canal with a limited traffic capacity would cost at least one hundred million francs. To construct a canal with the almost unlimited carrying capacity of the open Rhine would mean such excessively high rates and dues on the canal that the expense of this means of transport would be prohibitive to trade. The Rhine is the only river that is navigable from the Swiss frontier to the sea, and it passes through regions of considerable activity which are valuable to Switzerland for the supplies which she obtains therefrom.

Conseilleur National R. Gelpke deals very clearly with the reasons in favour of maintaining an open Rhine from Rotterdam to Basle, from an international as well as from a Swiss point of view. France is desirous of utilising the waters of the Rhine for the further production of hydraulic power, and, as M. Gelpke points out, as France still has over 9,000,000 h.p. of unexploited hydraulic power, exclusive of the Rhine, it seems hardly a sufficient reason for destroying the utility of this great waterway as a means of traffic.

* "De la Suisse à la Mer." (Zurich: Ebner et Cie.)

BOOK.

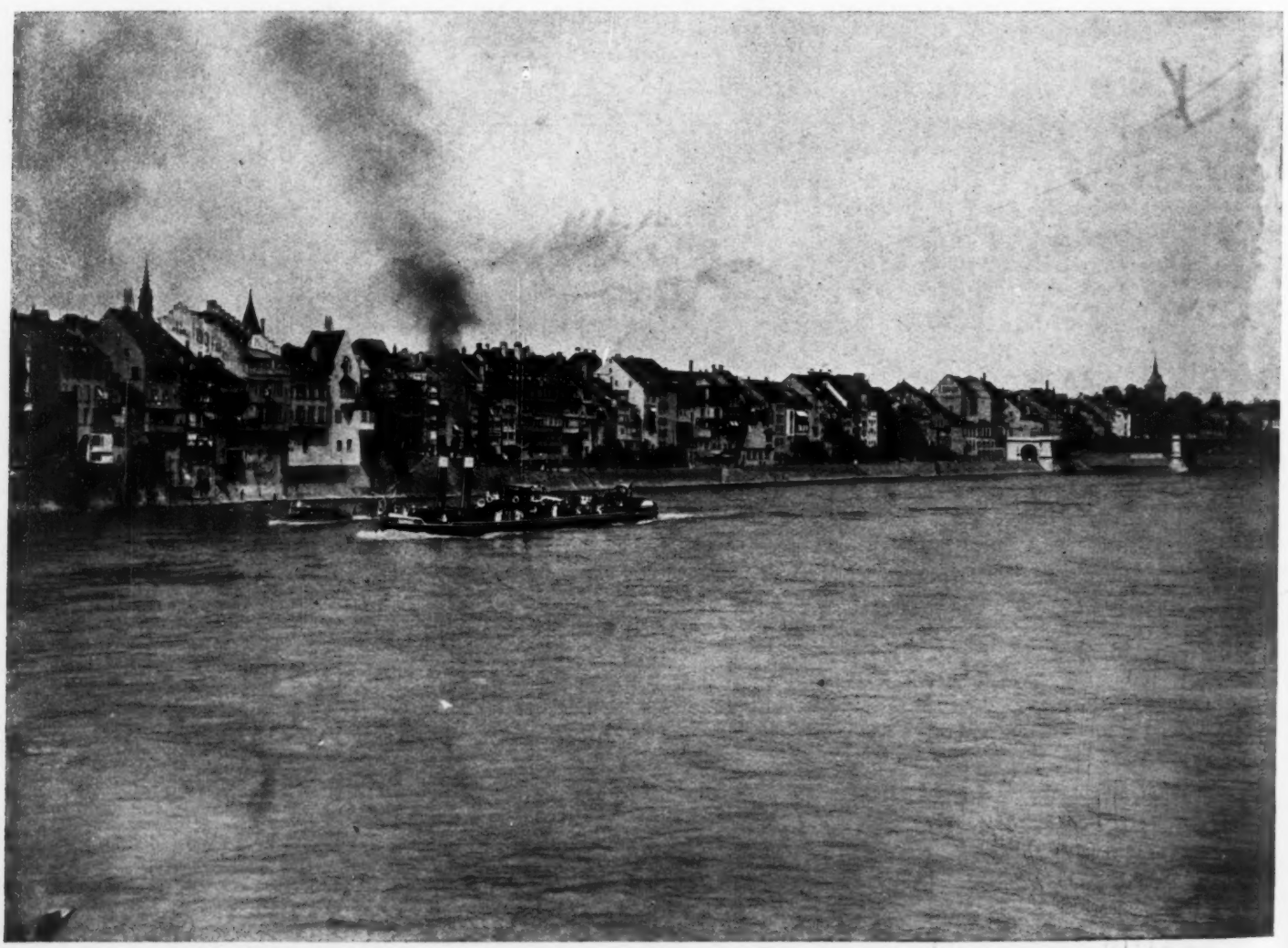
L'Arte di Distinguere gli Stili. By ALFREDO MELANI. Milan: Ulrico Hoepli. Price, L. 28.

In this volume, which completes Prof. Melani's trilogy on the art of distinguishing styles, from ancient Egyptian and Oriental down to the present day, the author deals with pottery, porcelain, glass, fabrics, tapestry, carpets, embroidery, lace, ivories, alabasters, leather-work and fans. The first sections of each chapter give a resumé of the origin and development of the respective style and its system of ornament, after which the fundamental characteristics of the work in the various materials are considered separately—one section dealing with pottery, another with glass, a third with fabrics, and so on; an excellent feature being the list at the end of every chapter describing typical examples and stating where they are to be found. Whilst the Professor lays stress on the necessity for a knowledge of styles on the part of workers in any branch of applied art, he condemns in no uncertain voice the slavish copying of old models which is a regrettable feature of present-day work. He does not, however, belong to those pessimists who deny the existence of a modern style, but holds that its somewhat tentative efforts are due to the changes which are taking place in the world to-day and to the prevailing materialism. As he truly says: "The strength of a people is in the people, not in any single representative of genius."

The 265 illustrations in the book gain in interest from the fact that they are mostly taken from pen-and-ink sketches by the author. There are likewise twenty-four full-page plates, showing tapestries, lace, book-covers, &c., including two specimens of modern English work. Not only has the author contrived to pack an immense amount of information into one small volume, but he has succeeded in doing so without sacrificing manner to matter. His style is both scholarly and attractive, and his views those of an enthusiast who is keenly alive to the beauty to be found in all styles and in all materials. His book should prove a useful guide to both students and amateurs who are able to read the beautiful language of Dante.

The National Gallery.

Room V at the National Gallery has been re-hung with pictures of the Milanese School, including Leonardo's "Madonna of the Rocks," and was opened to the public on March 24.



The Port of Basle.

Leading Contents.

	PAGE
A GREAT OPPORTUNITY	395
NOTES	396
CORRESPONDENCE	399
SOME NOTES ON AUDITORIA FOR LARGE CHOIRS.—II	400
ARCHITECTURAL SOCIETIES	401
REBUILDING OF DEVASTATED FRANCE.—III	402
TO SWITZERLAND BY WATER	404
MODERNISM AND DESIGN.—IV	409
A CONTRAST BETWEEN ENGLISH AND AMERICAN METHODS IN BUILDING.—II	410
BUNGALOWS AND THEIR DESIGN	411
NEW WORKING-CLASS HOUSES	412
A NEW FACTORY ON THE UNIT PRINCIPLE	413
COMPULSORY ACQUISITION OF LAND	415
GIRLS' PAROCHIAL CLUB HOUSE, CHISWICK	415
DILUTION IN THE BUILDING TRADE	415
THE COST OF BUILDING IN SCOTLAND	417
THE MEASURE OF OUTPUT IN BUILDING	418
THE COST OF BUILDING MATERIALS	419

ILLUSTRATIONS.

Marlborough College War Memorial.

We illustrate this week the second premiated design in the recent Marlborough College War Memorial Competition, by Mr. F. B. Dunkerley, F.R.I.B.A. The first premiated design, by Mr. W. G. Newton, M.A., was illustrated in our issue for December 3, 1920. In the course of his report, Mr. Dunkerley says: Before arriving at a decision as to the most suitable type of plan to be chosen, several others, including some of rectangular form, were prepared, but these were discarded in favour of the amphitheatrical plan adopted. The building has been placed on the site with the axial line of the Chapel running through the main vestibule. The advantage of this course is that it has enabled the main building to be set back so that the view of the west end of the Chapel is not obscured. The decision to sink the central portion of the Hall below the ground level has been adopted for reasons of economy and convenience of access.

The main entrance for visitors is by a staircase of ample width and dignified character to a large crush-room, out of which open cloak-rooms for both sexes. This vestibule gives direct access to the Hall on each side of the stage, and connects with a wide corridor, which is also entered at the opposite ends by external doorways when visitors are present. It is suggested that these doorways shall be used by the boys for entering the Hall. Ample exit doors are provided at various points. The stage is circular in plan, thus facilitating the grouping of orchestra and choir around the conductor when the Hall is used for concerts. In the organ chamber the larger pipes are placed at the sides, where ample height is provided for them, and the smaller ones in the centre. Retiring-rooms with lavatory accommodation are provided in connection with the stage for both sexes. Six music practice rooms are provided under the stepped seats of the "wings," with independent entrances.

The large number of the names of the fallen will necessitate the provision of ample space for the memorial panels, which, it is suggested, should be placed on the wall on either side of the doorways which flank the stage, dedicatory inscriptions being placed in the panel over the door. It is suggested that the names should be incised in the oak panels and gilded. In such a position the memorial would be in constant view of the whole of the audience and very easily legible.

In view of the marked preference expressed by the Committee the exterior of the building has been shown as faced with stone. This course was, however, somewhat unwillingly adopted, as brick, which is the traditional material of the secular buildings of the College, would probably have been preferable. The Chapel should stand out in marked contrast from its neighbours, as it does at present, and a quiet-toned brick would form a far better foil to the delicate stone detail of the building. From the point of view also of cost a very large saving would be effected by the use of bricks instead of stone.

Apart from the facing, the walls would be of hard-burnt local bricks. They would be finished internally with ordinary lime plaster. The walls would be panelled in oak to a height of 12 ft. The floors would be of deal blocks, with teak or oak curbs to the steps. The ceilings would be in fibrous plaster in coffered panels. The roof of the body of the Hall would be of steel construction, the main trusses being of the lattice type. The outer roof covering would be of concrete finished with rock asphalte. The ceilings would be of 4-in. breeze concrete laid on steel lathing, to which the fibrous plaster slabs would be attached. Sufficient space would be provided between the two thicknesses of concrete to allow of access to gas pipes or electric wires.

The building would be heated by low-pressure hot water, the boiler being placed below the central wing and the pipes carried in ducts to radiators at points indicated on the plan. In addition to the radiators, a line of pipes would be carried round the auditorium in the cornice of the panelling. The radiators would be recessed in the walls behind the panelling with large removable metal grilles in front.

The cost is set out as follows:—

Estimated cost on the basis of 2s. per cubic ft.	£39,871
Approach staircase to Chapel	2,600
Drainage	330
Gates and railings, &c.	975
Heating and ventilating	1,600
	£45,376

Bank of Africa Headquarters, Cape Town.

This was the successful design in a limited competition, for which Sir Reginald Blomfield, R.A., was the assessor. The elevation was exhibited in the Royal Academy in 1919. The purpose of the building was to house the general manager and the whole of the staff of his department in the upper floors, and an important branch of the bank on the ground and mezzanine floors; the basement contains the strong rooms and sorting rooms of the branch, and also the record rooms, stationery stores, and stationery despatch rooms for the general manager's department. The whole construction was designed to be as fire-resisting as possible. The floors and roof are of reinforced concrete; the main internal supports are of steel encased in concrete; the external walls are of brick and stone. All windows and the window shutters to street fronts are of steel by Crittall & Co.; the structural steel work is by Dorman, Long & Co.; and rubber floor-tiling is by the North British Rubber Co. The whole of the joinery is in teak.

Mr. Thomas Sladdin, F.R.I.B.A., of 9, Library-place, Jersey, is the architect.

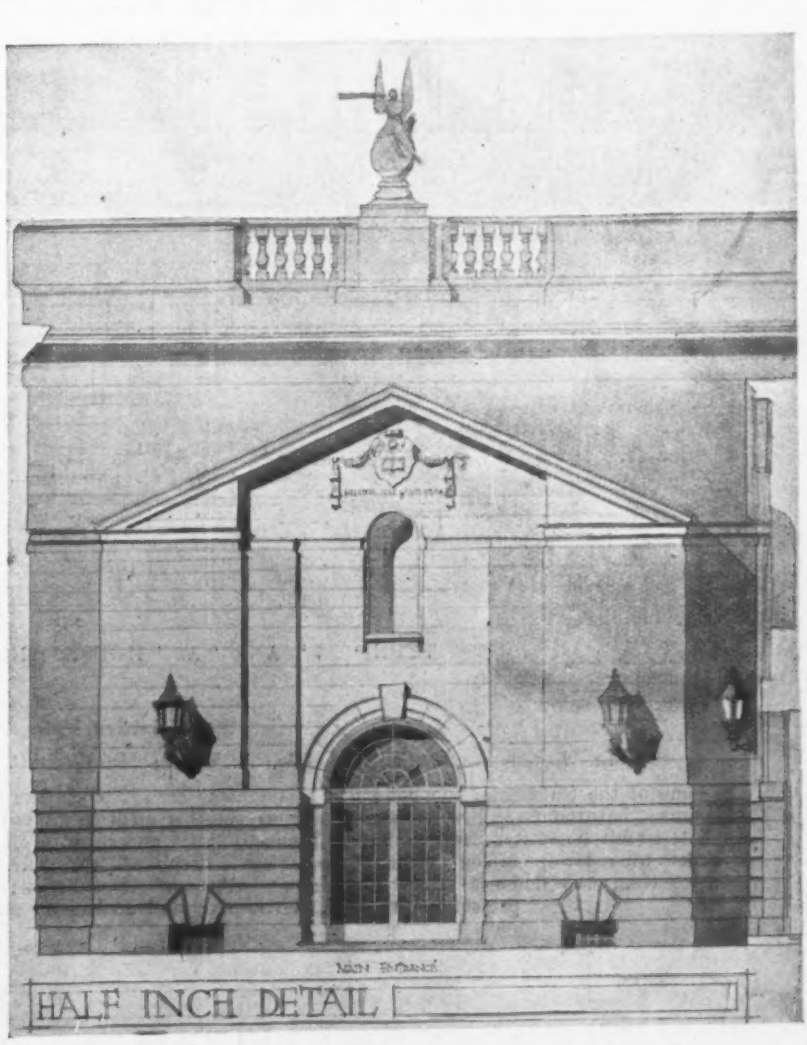
Cottage near Cape Town.

This was built in 1903, about eight miles from Cape Town, as a country cottage for the architect's own use. The walls are of brick, smooth plastered outside, and the roof is covered with English plain red tiles. The rooms are planned around a central chimney stack, and without passages, to economise building costs.

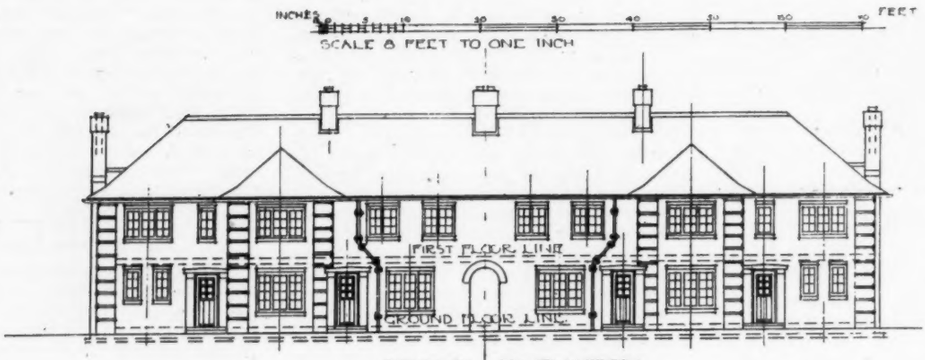
Mr. Thomas Sladdin, F.R.I.B.A., of 9, Library-place, Jersey, in the architect.

Graythorp Garden Village.

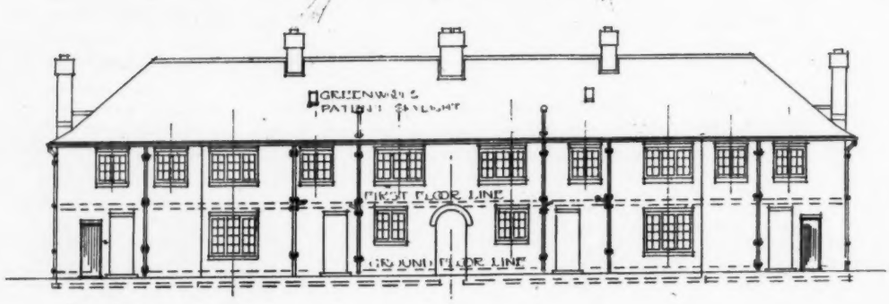
We also illustrate the Graythorp Garden Village scheme, for which Mr. James Forbes, Lic.R.I.B.A., is the architect, and Mr. Ivan C. Barling, M.Inst.C.E., is the engineer.



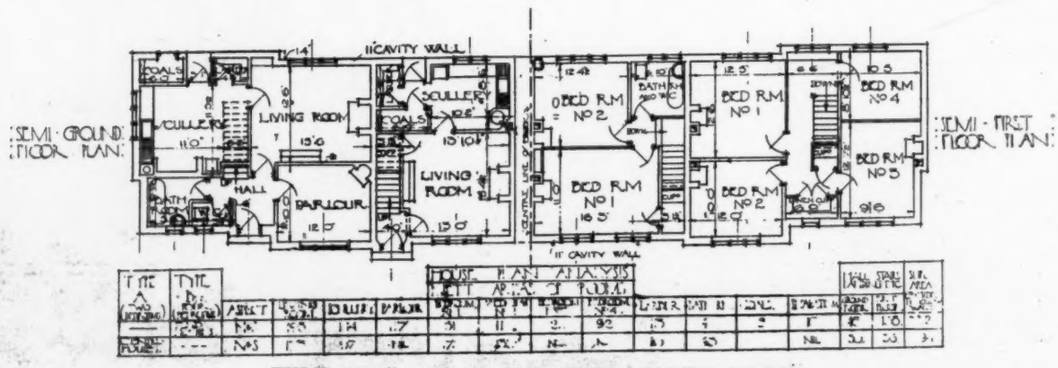
Marlborough College War Memorial Competition.
Second Premiated Design, by MR. F. B. DUNKERLEY, F.R.I.B.A.



FRONT ELEVATION



BACK ELEVATION

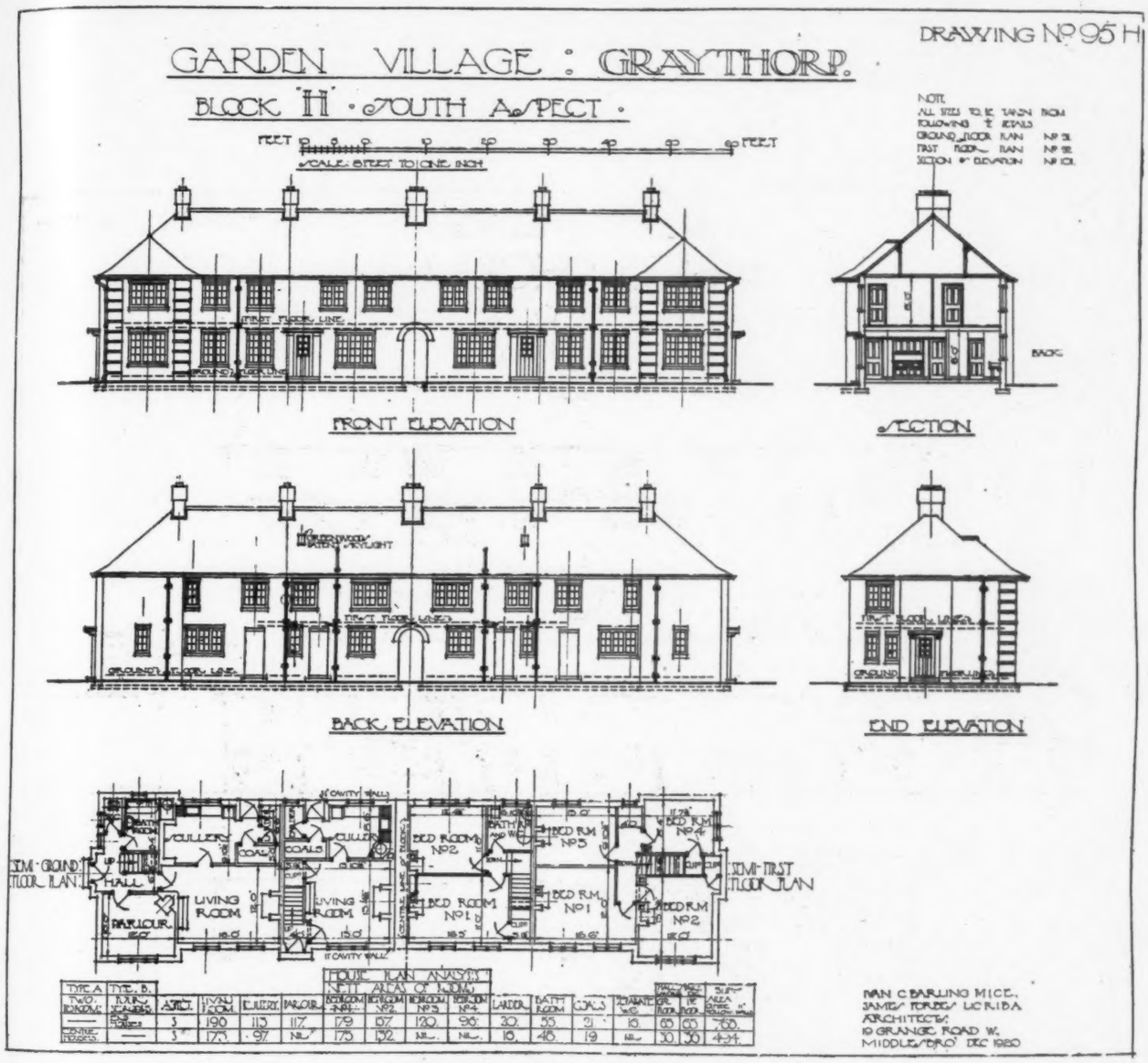


TYPE "B4" AND "A2" HOUSES: NORTH ASPECT.

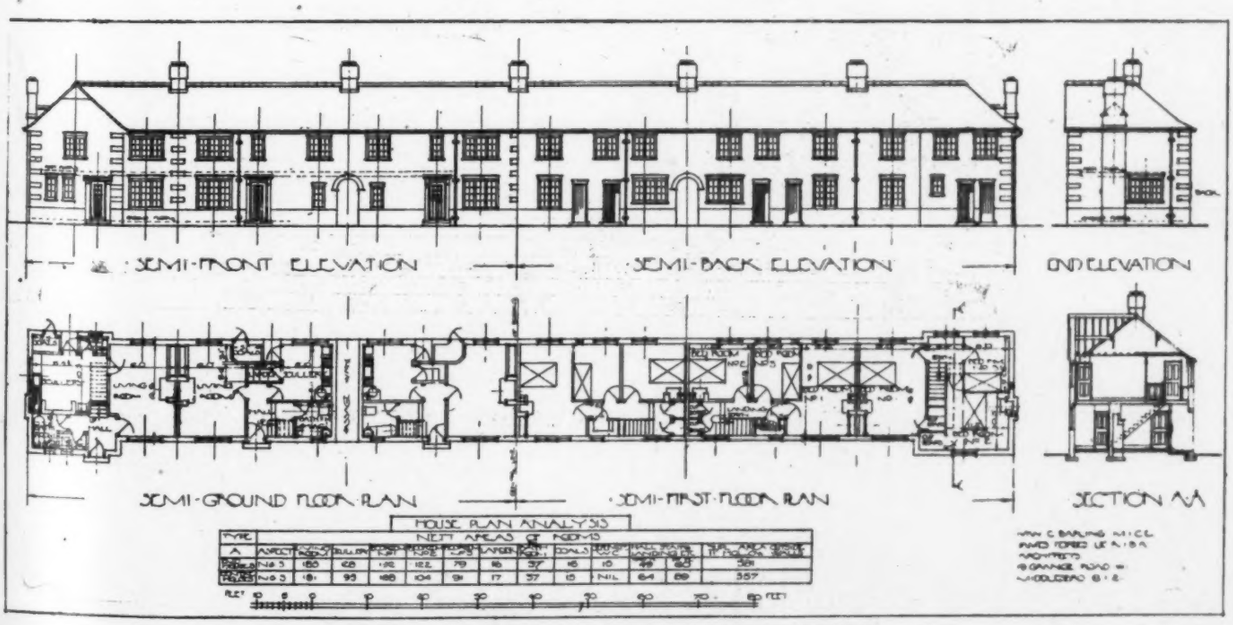
Graythorp Garden Village.

MR. JAMES FORBES, Lic.R.I.B.A., Architect; MR. IVAN C. BARLING, M.Inst.C.E., Engineer.

[Some of the features of the houses in this scheme are: No winders to stairs; sculleries lead direct off living-rooms; bathrooms and w.c.s are as far as possible on the ground floor, in order to reduce plumbing and short-circuit hot-water heating, but adjacent to stairs and in ante off entrance lobby; coppers *en suite* with sinks wherever possible; clear space around fireplaces and all doors well away from fireplaces; not more than two doors to living-rooms; no bathrooms off sculleries; no w.c.s adjacent to back entrances; no projections to back elevations; and larders off sculleries in every case.]

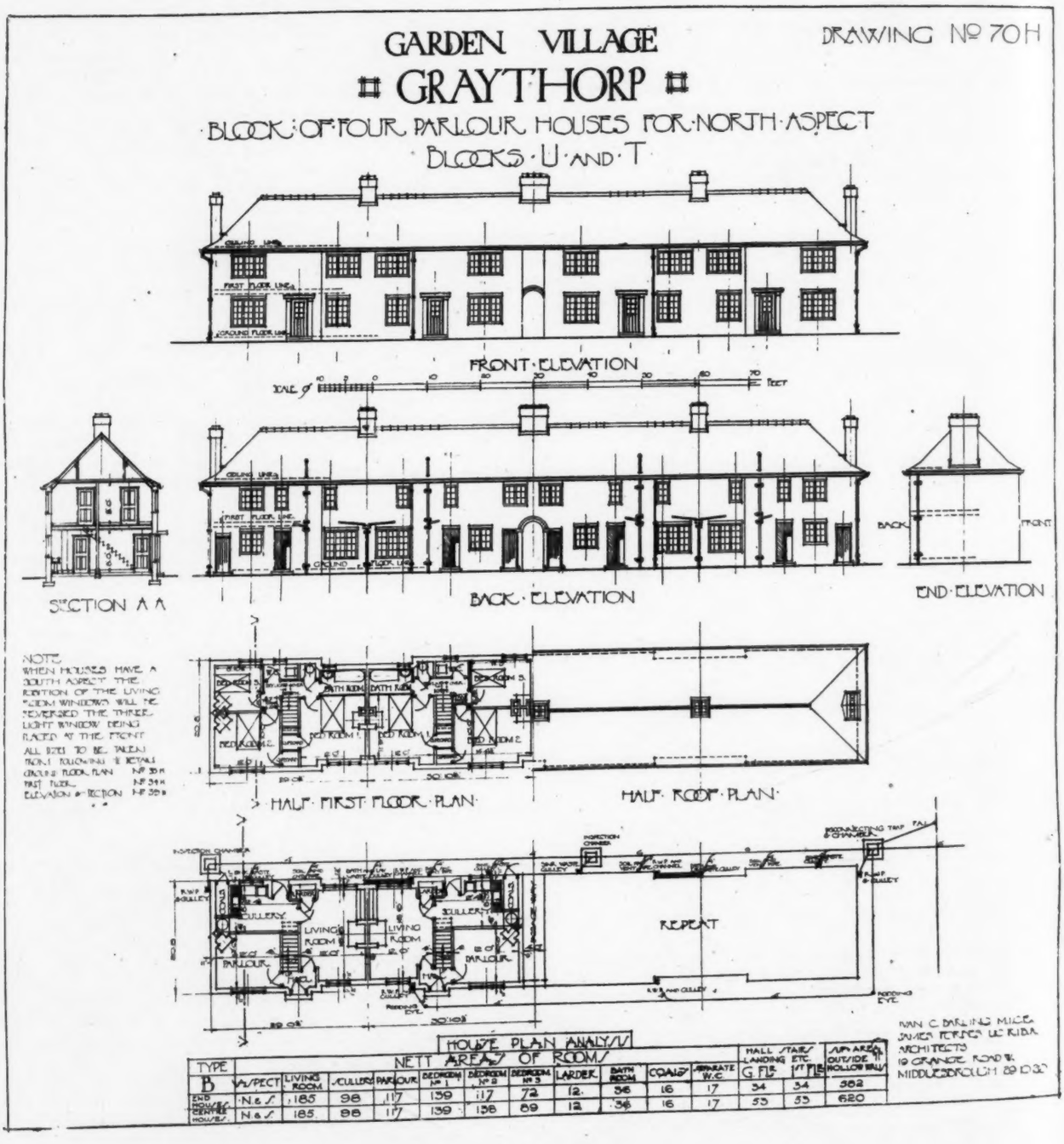


TYPE "B4" AND "A2" HOUSES.



TYPE "A" HOUSES: NORTH OR SOUTH ASPECT.

Mr. JAMES FORBES, Lic.R.I.B.A., Architect; Mr. IVAN C. BARLING, M.Inst.C.E., Engineer. (*See p.* 406.)



TYPE	ASPECT	LIVING ROOM	SCULLERY	PARLOUR	BEDROOM Nº 1	BEDROOM Nº 2	BEDROOM Nº 3	LARDER	BATH ROOM	COALS	SEPARATE W.C.	HALL STAIRS LANDING ETC. G FLR	HALL STAIRS LANDING ETC. 1ST FLR	NETT AREA OUTSIDE TO HOLLOW WALL
B	N.&S.	185	98	117	139	117	72	12	36	16	17	34	34	582
END HOUSE CENTRE HOUSES	N.&S.	185	98	117	139	138	89	12	36	16	17	55	55	620

TYPE "B" HOUSES.

Mr. James Forbes, Lic.R.I.B.A., Architect; Mr. Ivan C. Barling, M.Inst.C.E., Engineer. (*See p.* 406).

MODERNISM AND DESIGN.—IV.

FRENCH AND ENGLISH EDUCATION.

BY W. R. LETHABY.

This month I had intended to try to be practical and "positive," but two or three concurrent happenings have drawn my thoughts off to schools and education again. One is the account of a revised system of teaching Construction in the Paris School of Architecture, which is reprinted in the last number of the *R.I.B.A. Journal* (March 8). It explains a clear-sighted and practical effort to teach building under the conditions actually existing in the schools, and out in the world. I would like to recommend all students of architecture to read and think over it. I have seen numerous papers on the Beaux-Arts courses, but I seem never to have found any ideals and principles explained, but only little details of procedure and time-tables. We were told of the atelier, the patron and the concierge, and of the ragging of new students, the programmes, the projects, and of the final competitive efforts which were *en loge* like those of the candidates in ancient Chinese universities. "But," I have wondered, "where and how do French building-architects learn about building?" The *en loge* business can only make mandarins, not builders; building is a communal art. The paper just mentioned answers this question very fully, even to vulgar details like visiting building yards and serving at works. Granted our modern highly departmented and classified existence, the scheme set out seems about perfect except in respect of the time allotted, and I have a suspicion that this allowance will be modified. It appears that there is a course of General Science, including Resistance of Materials, Strains, Formulæ and Calculations; a course on Physics, Chemistry and Geology, dealing with the properties of building and cementing materials; a course of Stereotomy for the shaping and uniting of materials; a course on Building Law. The student, "when thus prepared, enters upon the technical and practical course of Construction," including "reinforced concrete, which is both a material and a method of construction." But I cannot quote it all, and must refer to the paper itself except for one Frenchly frank declaration—"The greatest difficulty arises from the fact that practical skill can only be really attained in the yard; yet some means must be found to teach it in the lecture room . . . a student has the greatest difficulty, even when he comes out of the school, in getting practical knowledge unless he enters some workyard without pay." One side of the French system is practical (as far as permitted in this time of transition), scientific and really modern. On the other it looks to a casual observer from outside stagnant and even retrogressive; the designing ideal which is fostered seems to be to express blind, frozen and sullen "grandeur" without humanity or heart; and the schools seem to be almost untouched by doubt of the old arrogance and superstitions. [But see below.]

Another chance which came to me was being present at a most interesting meeting of the Master Builders' Association, and thus finding out that they are being drawn into earnest consideration of education for building, and are taking it up in a large and generous spirit. The chairman said that building had a spiritual basis—think of that! in my thin little professionalism I felt quite shy at hearing any truth told about building in a human way. Perhaps, it occurred to me afterwards, he had hit on what might be a possible best definition of architecture—*Building on a spiritual basis.*

. . . . . .

At this point in writing Mr. M. J. Dawson has lent me a book, recently published in Paris, on the French position (*L'Architecture, Le Passé: Le Présent*, 1916). The author, A. de Baudot, was for twenty-five years professor of architectural history at the Trocadero, and died in 1915. He had been brought up after the strictest sect at the Beaux-Arts, in the atelier of Labrouste, and was a comrade of the encyclopædic Guadet, but he read Viollet le Duc's Dictionary as it first came out, and received from it the then strange idea that building should be a reasonable art. I have read this book eagerly, indeed with excitement, and will try to give a notion of its contents.

"At this moment we are in doubt as to whether our architectural practice responds to modern aspirations. It is, in fact, out of harmony with the scientific spirit, and we no longer work on any reasoned method. We trust in photographic imitation of the forms of past arts. *If the architect uses new materials and methods it is as an afterthought, without having taken account of them in the first conception.* We have no sense of direction and no unity; our efforts are incoherent and costly. This state of things is complicated by the idea of a new style; one of our eyes is blinded by ancient forms and the other is confused by pretence and phantasy. *It is not a new style we need but practical power.* Why has routine copying continued in architecture when it has disappeared elsewhere? To try to solve modern problems by building as in the time of Louis XVI is not only ridiculous, it is fatal. *The way of imitation leads nowhere, and a modern style cannot be built on nothing.* A new effort is necessary, but the public is ignorant and the professionals are driven on unthinking, isolated, and without proper discipline. *The architect does not really direct, he submits.* The situation will become dangerous if prolonged. In going back to common-sense, logic and sincerity we should break through the routine which arrests all development, and we too shall become creators. *It is necessary at any price to give up inciting the young to become parasites of past arts, they must look on the face of fact.* Perhaps I shall be called a pessimist, but really I hope for a better day.

"The architecture of the past was directed by two orders of ideas: in antiquity and the middle ages the creative power of the artist was developed; in later days they sought to repeat results. *We may escape from our bondage through the reasoned use of materials. Construction is for the architect what nature is for the painter and sculptor. As they must study the living so the architect must be inspired by construction.* A principle must replace our mere exploitation of forms. Many pupils of Viollet le Duc fell into the error of copying Gothic shapes and making troubadour designs, but this was never his intention. Some modern building essays, like the Central Markets in Paris, are frank and direct, but naked iron is not structurally satisfactory; iron with cement, and reinforced concrete are better. These methods bring to us many valuable possibilities, as thin double walls, terrace roofs, and the use of solid cast glass. *The architect in front of new problems must not be frightened, but rather stimulated.* We have taken appearance as the point of departure, but to-day we must work from construction. *Academic teaching about art is founded on faith.* It leads to shows of ephemeral talent, but there is no correlation between these projects and the courses on construction. *A contradiction is thus set up which is fatal to the spirit of the students.* The method of imitation must be abandoned for a theory based on needs, conditions, materials and methods. *Our own epoch ought to have its proper architecture.* The architect should be educated along with builders, artisans and specialists. A general school of building should take the place of the Beaux-Arts and its antique baggage. There is hope in the very force of things that change is imminent."

How this may have been received in France I do not know, possibly with scoffing or stone-wall silence, but I imagine the amended course of construction must in fact be one consequence.

In the last words, on the type of Building School which we need, I find what was to have been the conclusion of this paper anticipated. To carry the idea one thought further I would suggest that the builders of the country might be asked to confer with architects on a general and common scheme of education for the great national craft and industry of building. Secondly, I feel we require a translation of M. Baudot's book. There are, of course, a few little points with which I don't agree (as, for example, a phrase or two which seem to me to make too much of iron and cement while I want a theory which will also cover cob and thatch), but altogether there is not the amount of a page in the whole book which I should not have liked to have written—if I could.

Thirdly, I would recommend all students to read the revised French course on construction referred to at the beginning. It is quite essential that we should have thorough scientific training of the same kind not only available but compulsory so far as there is any compulsion. Fourthly, I would ask the youngest students not really to believe that the Beaux-Arts in Paris is an architectural heaven, untroubled by doubt. It would be safe to say that

science will there more and more disturb architectural faith, and if we cannot originate it ourselves now, we shall be borrowing a better theory a generation later. That is the only alternative.

Fifthly, I wish to acknowledge that very much of value might be learnt from the French schools, and that we should set about learning all we can which really applies. No one may look at the masterly plan of the Motor Club without acknowledging a highly trained skill, which can only be the result of special training of a scientific kind, even though it is given in the courses on "Theory." Few can look at the bald reticence of the Ritz Hotel, I should think, or even on the office of the *Morning Post*, without admitting their great competence, and at least they are not smothered in "orders" and "ornaments." Their merits, of a kind, are so obvious, and indeed overbearing, that it is only the remembrance that these are picked and very costly buildings, not properly representative of the whole results of the system, which tempers my compelled and unloving admiration.

I am sure that we must quite humbly learn the arranging, organising and packing skill which has become traditional in the French schools, as a science based on order, geometry and the data of construction and convenience. Our schools have work waiting, about which there can be no dispute and worthy of high ambition, in bringing out the arranging faculty, and constructive power, and a sense of community requirements; if only they would concentrate on these and turn away from hollow grandeurs and sham styles. The competitions set by the R.I.B.A. this year and the results, eleven Pliny's Villas (some fifty stretchers), and to the rest of the subjects hardly any response, was a disturbing phenomenon which should make us think and draw back.

INCREASE OF RENT.

Bankruptcy.

We may draw attention to an important decision in the Court of Appeal in the recent case Reeves *v.* Davies (*The Times*, February 22). The defendant was tenant of premises within the Increase of Rent Act, and he had been adjudicated bankrupt on April 30, 1920. On May 27 the Official Receiver, as trustee in bankruptcy, had disclaimed the lease. On July 10 the defendant had sent the plaintiff (the landlord) a cheque on account of rent, but the plaintiff had returned it, and on July 21 the plaintiff had instituted this action to recover possession of the premises from the defendant.

The defendant contended that he was entitled to remain in possession under the Increase of Rent Act, but the Court of Appeal held that the Act did not apply, and confirmed the decision of the court below making an order for possession. The Master of the Rolls observed that there was no decided case on the point, but he based his judgment simply on the proposition that where the tenant's interest had been entirely divested from him by operation of law and had become vested in the trustee in bankruptcy there was nothing for the Rent Restriction Act to apply to or protect. The fact that the trustee in bankruptcy had disclaimed the lease made no difference. The other Lords Justices concurred in the judgment, Lord Justice Scrutton, in the course of his judgment, commenting severely upon the drafting of the Act, as the Act ignored such elementary considerations as the effect of bankruptcy.

A CONTRAST BETWEEN ENGLISH AND AMERICAN METHODS IN BUILDING.—II.

By C. L. MORGAN, A.R.I.B.A. (Sometime School Architect, City of Vancouver).

The American contractor undoubtedly has his English rival "skinned." From the commencement until the completion of the work, the attitude taken up is one of intelligent anticipation, and the contractor and his agents see that a steady and constant flow of the various materials required is kept going; and, although materials have to be hauled long distances by freight train or by steamer, or both, and further hauled long distances from the railway depot or steamer wharf, the materials always seem to be on the site to time. The working hours on a building are usually from 8 o'clock in the morning to 5 o'clock in the afternoon; so that, in making a comparison, we can say that both countries to-day stand upon a par in this respect. And yet, thanks to the three factors mentioned at the beginning of these articles, the American contractor finds himself justified by results.

The secret underlying all this is work—largely accomplished by methods which save time, energy, and the consequent fatigue. Another essential difference is that the output of the workers and all concerned is kept at the efficiency standard, with the result that a building of, say, three times the size of one erected in this country is put up in half the time it takes to erect the building here.

Before a building can be commenced, what is known as a "permit" has to be obtained from the municipality. This is usually only the work of a few hours. In contrasting the difference in the methods adopted by the two countries, it will be found that the system of constructing either a reinforced concrete building or a building having a steel frame has many advantages over the necessarily slow erection of the brick or stone walls in use in this country. Walls in this country must be built to comply with either Acts of Parliament or by-laws, and must be of a sufficient thickness to be self-supporting. Comparing, therefore, the system in this country with that adopted in America, ours will be found to be about six times as prodigal of materials used in construction, and also six times more energy and labour is expended to produce the same results.

From the point of view of economy in the cost of construction, where the conditions are such that steel rods can be used, these may often be advantageously employed, as ordinary steel rods, either round, square or twisted, can be bought in the open market. The steel rods in the case of the columns are bound together with either galvanized or ordinary stout steel or iron wires placed about 18 in. apart, and bound spirally round the whole length of the columns. Where decreases occur in the sizes of the columns, they are made in the thickness of the floor; the joints at the junctions of the rods are made by using "sleeve pieces." These consist of pieces of iron barrel about 2 ft. long bent to the set-off required and fitted over both ends of the column rods. In the case of beam stirrups, these wires are bent over, and clip the rods and form the stirrups.

An ordinary reinforcement for the floors will consist of ½ in. diameter rods, placed so as to form a 4 in. or 5 in. square lattice. Floors having such a lattice can be constructed up to a span of about 24 ft. The wires forming the lattice are tightly bound together at the junctions with thinner wire. These hold the reinforcements taut, and in the case of the outside columns and beams about 1 ft. of these wires is bent down before cutting off and left in position; they are afterwards turned up or down as required, and used to form a sort of anchor where an outer skin or veneer of brickwork is used to the outside walls.

In the case of patent bar systems being employed, the rods and bars are usually cut to sizes and bent as required at the works before delivering them on the site; but in the case of ordinary plain or twisted rods or bars being used these are bent as required and cut to sizes on the site.

I have had experience in using several of the patent bar systems, and also in erecting buildings with plain or ordinary steel rods and bars, and I have found the latter quite efficient, and economical to use. A small portable forge is all that is required on the site for the necessary bendings. In fact, the specification for the steelwork for the most part can be so drawn that much of the bending can be advantageously done while the steel is cold.

After the concrete frame has been erected, the building usually receives a thin veneer of brick, stone, or some form of terra-cotta, or "tile" as it is called. In buildings erected for utilitarian purposes much of this work can be dispensed with to advantage. It is usually only found "applied" to buildings of a "public" or "semi-public" nature. Much of this "veneer" work is poor, and the principle of hiding up the construction by a thin covering or veneer merely applied to, but serving no constructional purpose, is to be deplored, and is undoubtedly bad.

The principles inherent in the construction are as important as is water to the formation of a crystal; it is so inherent that without it the construction could not exist. Such features as the columns and beams should, therefore, be given their legitimate expression in the design of the buildings, which can only add charm to these otherwise fine erections, and incidentally effect a great saving in cost.

Let us examine the methods by which an English bricklayer working in America will lay some 1,000 bricks in the course of an 8-hour day, that is, about 125 bricks per hour. The work he is engaged on is, say, the building of a wing or curtain wall 9 inches thick between the concrete columns. The American practice of laying bricks, or "buttering," as it is called, is to lay them by applying a thin scrape of mortar at the edges only of the bricks. The materials (that is, the bricks and mortar) are placed in cradle beside the worker, the bricks frog up and at a convenient height so that the energy expended by a man in laying a brick is reduced to, say, two motions: (1) that of putting out the hand to reach the brick, and (2) the "buttering" and laying.

When terra-cotta blocks are used instead of bricks, the superficial area of wall erected by a man is, of course, much larger than in the case of brickwork. These blocks are made of a light, porous terra-cotta; they measure about 18 inches long by 12 inches high, and are made 4 inches or 8 inches thick, as required. Each block weighs only about 6 lbs., and they are therefore easy to handle. The time taken in laying one of these blocks is only one-sixth that of laying a similar area of brickwork. Their use, therefore, is an immense saving in both energy and time.

An example of this terra-cotta, or "tile" work, can be seen in the outer walls of the Beaver Hut in the Strand.

War Memorials.

The following war memorials have been carried out from the designs of Messrs. Philip Robson & Partners, of London and Manchester: Wray Church, Windermere: A war memorial in green slate and kirkstone in the form of a cross with a bronze crucifix. St. Mary, Bradford, Yorks.: An external Calvary on the west wall of the church. St. Chrysostom, Manchester: Reredos and oak panelling to the Anson Chapel. St. Saviour, Ringley, Lancs.: A new choir vestry and a crucifix.

BUNGALOWS AND THEIR DESIGN.

THERE has been a general tendency since the war for workmanship to deteriorate, whether the article be a piece of furniture, a pair of boots, or a house; the power of durability, of withstanding not unduly harsh treatment, but the wear and tear inseparable from the performance of the function for which the article was created, is too often lacking. In the general acceptance of this fact is, perhaps, to be found the explanation for the increased popularity of the bungalow as a type of dwelling. It is doubtful if, as a type, the bungalow is cheaper than the two-story house, provided the same standards of workmanship and materials are compared. For the most part, however, this is not done. The form of the bungalow is such that poorer standards can be used for its construction. The weight of the building is distributed over a larger area, the walls are not required to carry so much weight (there being no first floor); consequently, they can be more lightly constructed and less foundation is required; and as the area to be roofed is large, it is generally pitched low and often covered with a light covering.

Another factor which acts in favour of the one-story dwelling is the increased economy in maintenance. Few people realise, until they are faced with the necessity for managing a house unaided or with less help than that to which they have hitherto been accustomed, the amount of energy spent in ascending and descending from one floor to another. If measured in terms of foot-pounds the figure would be surprising. Floor space is also saved by the omission of the staircase. An allowance of 70 ft. super. is made by the Ministry of Health for houses eligible for the subsidy under the Housing (Additional Powers) Act, 1919, which are built on one floor.

In view of this increased interest in the bungalow, the revised edition of Mr. Percival Harrison's book* appears at an opportune moment. It is, however, to be regretted that, in making his revision, Mr. Harrison did not do so on more comprehensive lines. Many of the new forms of construction are eminently suitable for work of this kind, and a description of some of them would have added value to the book. For example, there is no mention of the concrete block-making machine, but only of wet mixing in moulds, and it is by means of one of these machines that an attempt can be made to overcome the present shortage of bricks and skilled labour. Mention might also have been made of cement gun construction, which is a speedy system of building that has found much favour in America, and is now being introduced in England. The plans, too, might with equal advantage have been brought more up to date; labour-saving devices of all kinds are in demand, and the better to accommodate these, compact planning has become necessary.

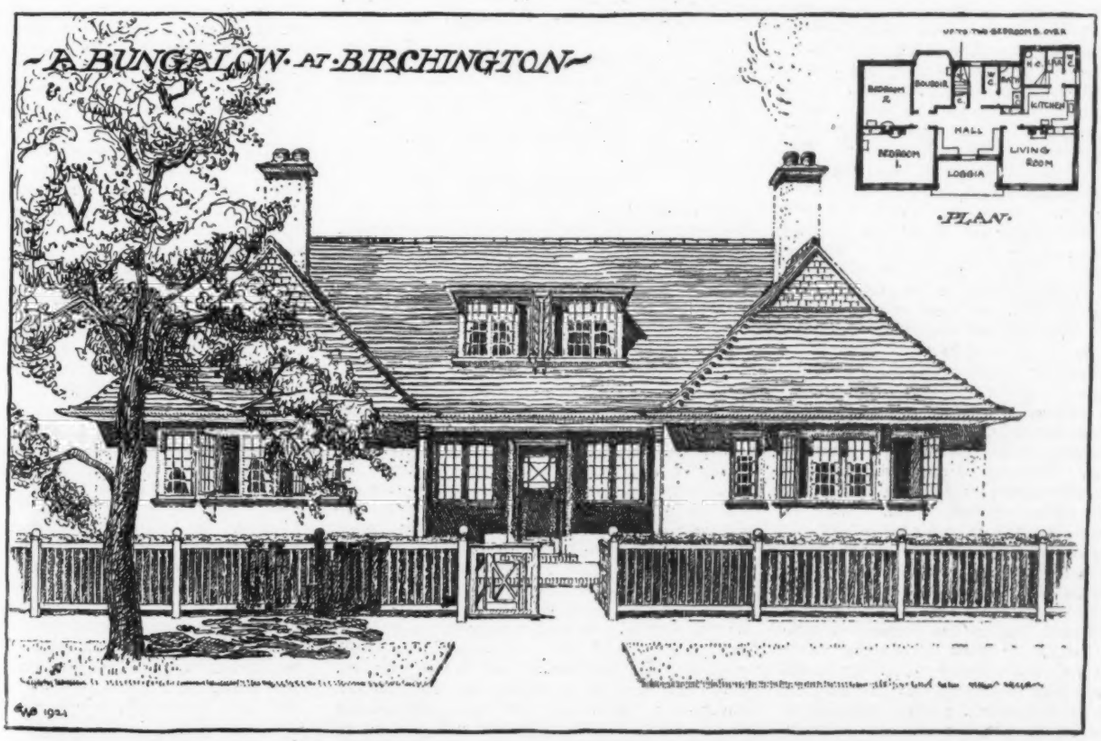
The same defect is to be noticed in the book by Mr. Samson†, the purpose of which is to give information to English-speaking people wishing to build abroad. But the same difficulties and the same attempts to overcome these difficulties are to be met with in most other countries, and these facts should have received recognition in preparing a new edition. Many of the plans strike us as being but little in harmony with modern ideas. Mr. Samson pours scorn upon the work of the Georgian period; he is apparently unaware of the return that is being made to simple forms and to axial planning. Economies effected in compact planning would enable him to include some of the sanitary fittings that are to-day considered essential in houses of the size that are illustrated. Two bathrooms in a house containing eleven bedrooms is surely a little behind the times, more especially in a house to be erected in a hot climate. However, the book covers a very wide range, and should be of considerable use to those who may be contemplating building abroad and who are unaccustomed to the method of equipping houses in other countries. The Englishman living abroad will naturally want to combine certain of his native ideas with those of the country of his adoption, and Mr. Samson's book is an undoubted assistance to this end.

Another book on bungalows just published‡ contains some useful information in the short chapters which preface the plate illustrations, though it is those illustrations which are of chief value. The author deals with planning and design, methods of construction equipment, furnishing, and building a bungalow with the Government subsidy, and he has produced a book which should be of considerable assistance to those contemplating building a bungalow. The illustrations include some excellent examples of bungalows actually built by well-known architects who know how to give architectural quality to their work, and these, with their descriptions, occupy more than 100 of the 156 pages of the book, which is an excellent and well-produced little volume.

*"Bungalow Residences." By Percival T. Harrison, A.M.I.C.E., M.R.S.I. London: Crosby Lockwood & Son. Price, 7s. 6d. net.

†"Houses, Villas, Cottages and Bungalows." By George Gordon Samson. London: Crosby Lockwood & Son. Price, 7s. 6d. net.

‡"The Book of Bungalows." By R. Randa Phillips. London: *Country Life* Office, 20, Tavistock-street, W.C. Price 8s. 6d. net.



Bungalow at Birchington-on-Sea, Kent.

MR. G. BERKELEY WILLS, A.R.I.B.A., Architect.

[This bungalow is just being completed. It is constructed of 11 in. hollow brick walls covered with 1 in. cement roughcast, and the roof is covered with braids, felt, battens and dark, hand-made, sand-faced tiles. The sitting hall measures 15 ft. by 11 ft. The living-room and bedroom No. 1 are 17 ft. by 13 ft., the former having a service hatch fitment to working kitchen. There are two bedrooms in the roof, each 15 ft. by 10 ft. The house has been planned to save labour as far as possible, and lavatory basins are fitted to the bedrooms, supplied by an independent boiler, which also supplies two radiators in the sitting-hall. There is a gas-stove in the boudoir and a gas cooker in the kitchen. The house is lighted by electricity supplied from a small plant in an engine house in the garden. The builder is Mr. C. H. Edmonds, of Birchington.]

HOUSING AND TOWN-PLANNING NOTES.

Scottish Housing and Town-Planning Conference.

Under the auspices of the Scottish National Housing and Town-Planning Committee, a housing and town-planning congress is to be held at the Council Chamber, City Chambers, Edinburgh, on April 19 and 20, to consider the following questions:—(1) The need for the adherence of the Government to the national housing programme; (2) the fixing of rents, and other administrative problems arising in regard to the administration of the financial regulations; (3) the extension of the period to be allowed for carrying housing schemes into effect; (4) housing finance; (5) regulations as to the management of housing estates, general conditions of tenancy, &c.; (6) the need for adherence to good standards of construction and design of houses; (7) (8) and (9) the concentration on housing schemes of labour and materials in sufficient volume to enable a large number of houses to be built in 1921—questions relative to difficulties in securing tenders at reasonable prices—the supply and price of building materials. The above problems are under the heading of urgent problems, and the following questions which will have to be dealt with in the future will also be considered:—(1) The preparation of comprehensive and constructive schemes for carrying into effect the recommendations of the Royal Commission on Housing in Scotland; (2) the preparation of town-planning schemes (both regional and local) in anticipation of the operation of Sections 32 and 33 of the Housing, Town-Planning, &c. (Scotland) Act, 1919.

Edinburgh Housing.

In the course of his evidence before the Committee of Inquiry into the High Cost of Building Working-Class Dwellings in Scotland last week (a report of which is given on p. 417), Councillor Whitson, of the Edinburgh Town Council, said in Edinburgh the spade work had now been done, and the housing programme was in a fair way to being completed. The major part of that programme, he considered, lay in the reconstruction of old Edinburgh. The Corporation had a very ambitious programme in this direction before it. It had drastic powers, which would no doubt be used to the fullest extent. There were very bad slum areas in Edinburgh to be cleared, and the clearing of them and the reconstruction of many of the old but excellent buildings would be the most satisfactory method of solving the housing and town-planning problem in Edinburgh. The Corporation could provide satisfactory houses of three and more apartments in these areas for not less than half the cost of providing less satisfactory houses in the outskirts. The cost to the local authority was very much reduced by its power to acquire compulsorily slum property. This policy of reconstruction would require to be carried out on a large scale if it were to be carried out at all, as the mere pulling down of one building in an unsatisfactory environment would be useless. The standard prescribed by the Board of Health was in the present circumstances too high. In view of the lean years which lay before the country he did not think it was practicable to carry out the housing programme on the standard which was originally contemplated. The working man could not afford to furnish a house of three to five apartments; he could not afford the transport necessitated by living several miles from his workplace, and the spreading of the population over a wide area led to serious expenditure by the authority in roads, sewers, &c. He did not, however, advocate a return to tenements, but houses which it was proposed to provide by the conversion of old buildings would provide excellent and superior houses for the Edinburgh people.

WEEKLY HOUSING RETURN.

Housing schemes dealt with by the Ministry of Health during the week ended March 18 included the following:—

Applications.

SITES.

URBAN.—Margate, 22 acres; Rhondda, 70.5.

LAY-OUTS.

URBAN.—Nottingham, Watford, Workington.
RURAL.—Blackwell, Bromley, Chard, Chesterfield, Clun, Depwade, Honiton, Ludlow, Neath, Norton, Rhayader, Ruthin, Selby, Sturminster, Tewkesbury, Vaynor and Penderyn, Warrington, Weymouth.

HOUSE-PLANS.

URBAN.—Altrincham, 44 houses; Barking Town, 18; Ealing, 10; Linthwaite, 112; Maryport, 34; Nottingham, 34; Saddleworth, 30; Seaham Harbour, 50; Tynemouth, 25; Willesden, 76; Worcester, 14.
RURAL.—Beaminster, 2 houses; Chard, 8; Clun, 8; Cowbridge, 10; Depwade, 12; Doncaster, 93; Gwyrfai, 12; Honiton, 4; Louth, 6; Ludlow, 4; Newtown and Llanidloes, 6; Ruthin, 8; Selby, 8; Sturminster, 6; Tetbury, 8; Tewkesbury, 8.

Approvals.

LAY-OUTS.

URBAN.—Belper, Nottingham, Workington.
RURAL.—Beaminster, Blackwell, Blandford, Chard, Chesterfield, Clun, Clutton, Depwade, Honiton, Liskeard, Long Ashton, Louth, Ludlow, Norton, Selby, Tewkesbury, Thornbury.
COUNTY COUNCIL.—Lancashire.

HOUSE-PLANS.

URBAN.—Ealing, 10 houses; Nottingham, 34; Saddleworth, 30; Willesden, 76; Worcester, 14.
RURAL.—Beaminster, 4 houses; Chard, 12; Clun, 8; Clutton, 38; Cowbridge, 20; Depwade, 12; Gwyrfai, 12; Honiton, 4; Knaresborough, 8; Liskeard, 3; Long Ashton, 6; Ludlow, 4; St. Dogmells, 16; Selby, 8; Tewkesbury, 8.

Tenders Approved.

URBAN.—Cheadle and Gatley, 32 houses; Cleethorpes, 54; Coalville, 90; Cottingham, 36; Midsomer Norton, 32; Nottingham, 34; Sheffield, 2.
RURAL.—Chorley, 1 house; Woodbridge, 8.
COUNTY COUNCIL.—Lancashire, 1 house.

THE NEW WORKING-CLASS HOUSES.

In a memorandum issued by the National Housing and Town-Planning Council, on behalf of the Housing Committees of local authorities, it is stated that in practically all housing schemes of urban local authorities the number of twelve houses per gross acre has not been exceeded, with the result that, when the space devoted to building and roads has been deducted, from 250 to 300 square yards of garden land is available. Most local authorities have provided a set-back of at least 20 ft. for the houses. In addition to privacy being secured for the front rooms, sufficient space is thus given for small front flower gardens. The need for rigid economy has enforced the elimination of stone and iron fences and division walls, and the fences for the front gardens of the new houses are for the greater part of the wood and wire type, with concrete or wood posts and strands of slender wire rope as division fences between rear gardens. Privacy will be attained by planting hedges, which in the course of time will conceal the fences.

Another question with which Housing Committees are confronted is that of choosing suitable names for the new roads and streets included in their schemes. There is, happily, general agreement as to the desirability of recognising the garden-suburb character of choosing the names of trees, shrubs, and flowers in preference to individual names. In some areas there is a movement on foot to justify the choice by planting the trees thus named.

The need for the exercise of economy will prevent Housing Committees from doing many things to render their estates beautiful, but it is hoped that the warm public approval with which the development of housing schemes is being regarded will lead many well-to-do people with large gardens and parks to form local Kyrle Societies to co-operate with Housing Committees in their endeavour to bring the amenity of the flower garden and the beauty of the blossoming shrub and tree into the lives of the people.

What has been termed the "battle of the parlour" is still being fought in many council chambers, but it is now clear that victory will rest with the advocates of the parlour as an essential feature of a well-equipped house. The coming development in secondary education and the influence of the Workers' Educational Association will within the next twenty years compel those responsible for the designing and erection of houses to regard the addition of a parlour as a *sine qua non*. Many women councillors, interpreting the wishes of women electors, express the view that the possession by a working-class family of a best room, in addition to the living room, has a special value during the courting period.

There is absolute agreement amongst Housing Committees concerning the need for a third bedroom, and it is interesting to note that the number of two-bedroom houses erected by local authorities is much less than ten per cent. of the total. In rural areas the proportion of two-bedroom houses is still less.

Nearly 20,000 houses built by local authorities are now let, and for the greater part Housing Committees have taken the line of assuming that when working-class families are placed in possession of well-built and properly-planned homes no special stimulus is necessary in order to induce them to make good use of their opportunities and become "house proud" in the best sense. The experience of Housing Committees goes to prove that this confidence is fully justified, and the great majority of the tenants of the new houses realise their duties towards their neighbours and themselves in regard to cleanliness. In cases which may arise where the tenants of the new houses continue the neglectful and dirty habits contracted under bad conditions of housing, it is believed that a number of Housing Committees will employ women as Deputy Managers charged with the general duty of watching over the amenity of estates, and with the special duty of checking any tendency there may be on the part of tenants to lower the standards of well being and cleanliness.

VALUATION OF PROPERTY.

At a recent meeting of the Auctioneers' and Estate Agents' Institute Mr. J. G. Heald (Past President) read a paper on "The Problem of Post-War Valuation." After a general survey of the position, he drew the following conclusions: (1) The high prices obtained for possession of dwelling-houses are on the decline and likely still to fall; they have not wholly subsided, but the crest of the wave has been passed. With the shortage of money and other conditions, buyers have in many cases reached their limit, but sellers have not wholly appreciated this—they must, however, inevitably do so and then occupation prices will fall still further; (2) investment values which have been depressed should rise if money conditions become easier; (3) business premises are not likely to maintain the excessive prices recently paid for them; (4) the rise in rates is a depreciatory influence on values; (5) the diminished purchasing power of money will, in all probability, prevent a permanent return to anything like pre-war values; (6) in the valuation of building land should be included a due allowance for its inevitable recovery to economic values.

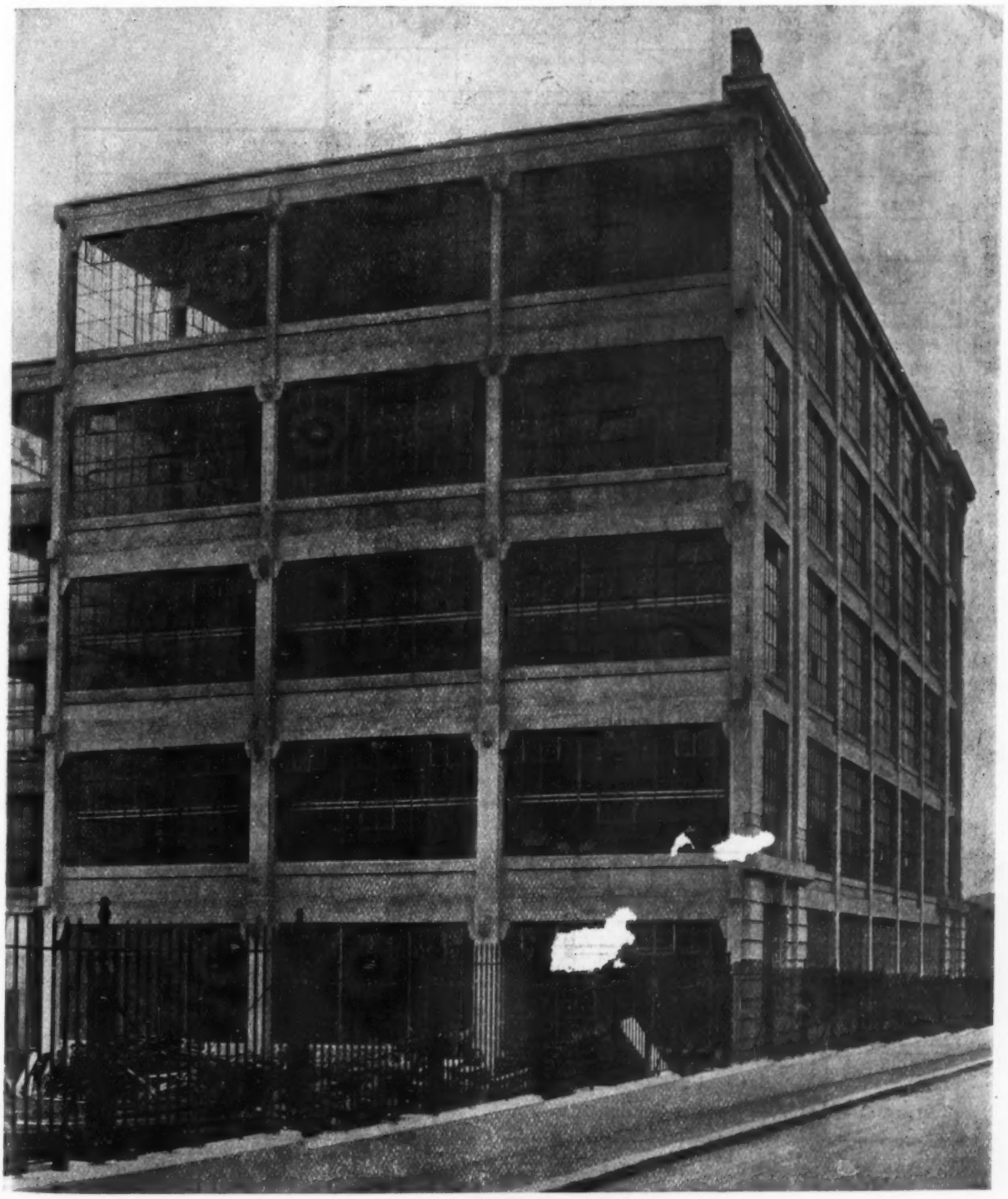
A NEW FACTORY ON THE UNIT PRINCIPLE, NEAR OLDHAM.

The unit type of multi-story factory, which is a factory where the lay-out is divided into units, each one complete in itself, may be said to have originated in Ameriea. By it a factory is not designed for present requirements alone, but provides for all possible extensions for perhaps a generation or two ahead. The unit may be a complete building, as in the Small Heath scheme for the B.S.A. Co., where there are three units, each 600 ft. long by 60 ft. wide by four stories high. Each of these units, again, is a combination of smaller units, in this case 20 ft. by 20 ft. That is to say, each floor is 30 bays long by 3 bays wide, or 90 equal bays of 20 ft. by 20 ft. per floor or story. On the other hand, the unit may be only one story of a building which it is intended to extend to four, five or more stories later, in which case, of course, the foundations and columns are designed of sufficient strength for the ultimate loads they will carry. Story is added to story, unit to unit, as and when required. The building is always complete, yet the scheme is never completed until the whole site area is utilised, and utilised to the topmost stories.

Another feature in the unit arrangement is the advantage from the point of view of the works manager or mechanical engineer in the uniform spacing of columns and beams. If every angle is an angle of 90 degrees and every column, every main beam, and every secondary beam is equi-distant from adjacent columns and beams, it is possible to standardise a great deal of the mechanical equipment. Further, the equipment can be removed in part or in whole to another part of the building with a minimum of inconvenience and expense.

Although 20 ft. by 20 ft. has been mentioned as a unit for multi-story factories the figure is not arbitrary. The width and length of the building, and the floor loads, affect the spacing. If circumstances allow it, the width is nearly always fixed at 60 ft., and at that width a floor height of 14 ft. 6 in. is generally sufficient to allow of adequate daylight permeating the whole area of each floor; that height also gives the necessary length of drive for the belting in a manufacturing building. Were another 20 ft. unit, or bay, added to the width, making it 80 ft., a height of 17 ft. would be necessary for adequate lighting. These figures, of course, have reference only to a modern reinforced concrete "daylight" factory where practically the whole area of the external walls can be utilised for glazing.

A "unit factory" has recently been erected at Delph, near Oldham, for Messrs. Hirst Bros. & Co., Ltd., clock manufacturers, from the designs of Mr. A. J. Howcroft, of Oldham. The factory is of reinforced concrete construction on the "Kahn" system, and is T-shape on plan, the lay-out of 20 ft. by 20 ft. units having been applied throughout. In the main structure, measuring 140 ft. by 60 ft., the floors were designed for a super-



A New Reinforced Concrete Factory. Mr. A. J. Howcroft, Architect.

imposed load of 1½ cwt. per square foot, while in the wing, which measures 40 ft. by 60 ft. wide on plan, the load designed for is 1 cwt. per square foot. A height of 15 ft. is uniform throughout the five stories, and for the attachment of overhead mechanical equipment slotted inserts have been embedded in the underside of every beam in the main building, and holes also were cast in all main and secondary beams at regular intervals for electric wires, etc. In all three of the 60 ft. ends the columns and beams have been designed with provision for extension. Extension will be a simple matter whenever it becomes necessary, and the steel sashes in these end walls can be transferred to a side unit in the new construction. Indeed, even the concrete sills to the curtain walls would automatically fit in.

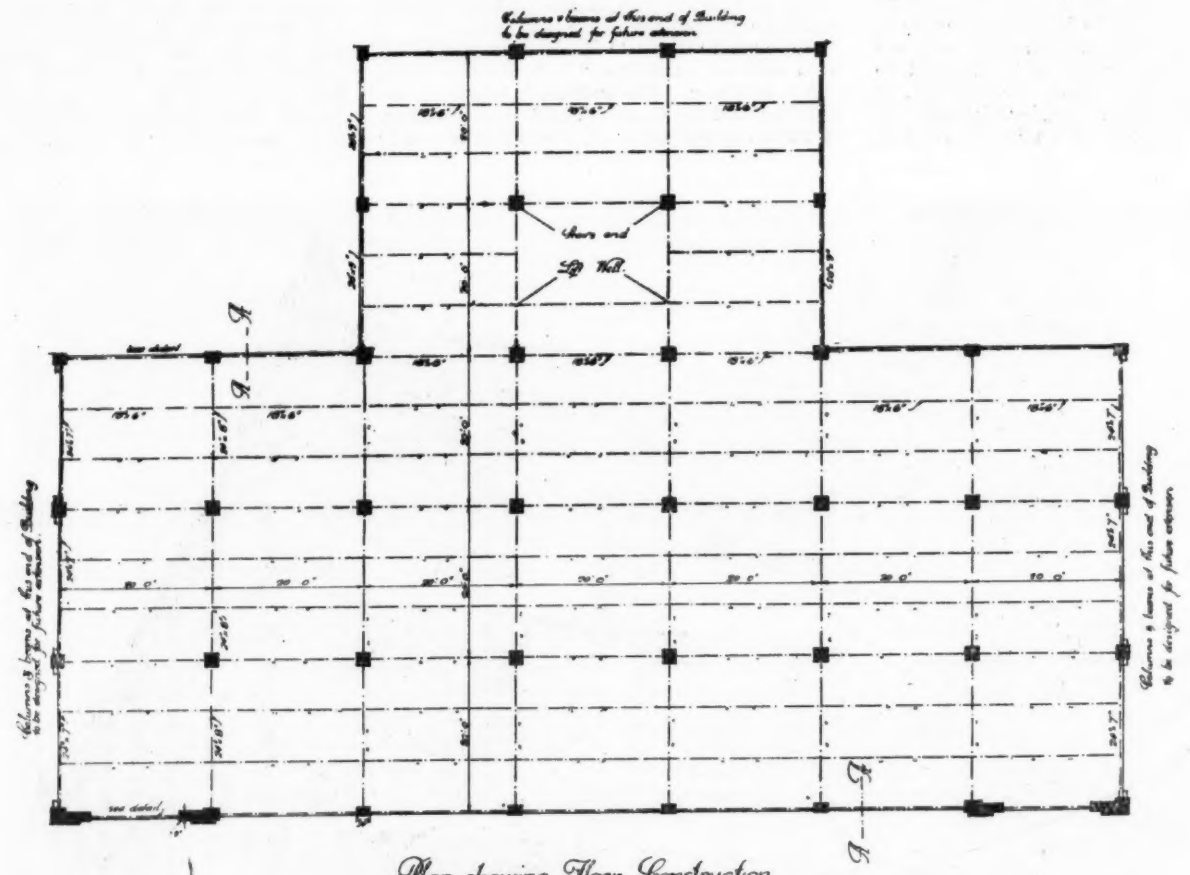
The reinforcement was designed and supplied by the Trussed Concrete Steel Co., Ltd., South Kensington, and the general contractors for the building were Messrs. S. and J. Smethurst, Ltd., Oldham.

An Old London Coaching Inn.

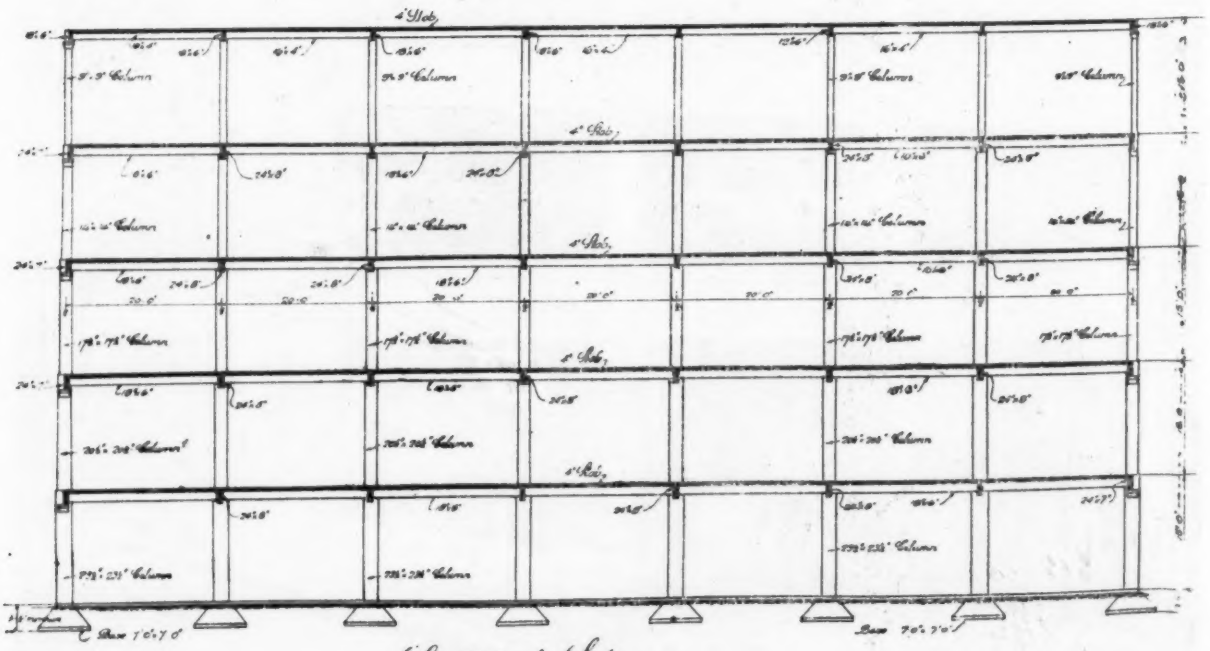
The "Bolt-in-Tun," Fleet-street, is to be demolished to make way for a more modern building. It was originally a famous old coaching hostelry.

The New Delhi.

Sir Edwin Lutyens, R.A., who has just returned from India, has stated in an interview that owing to financial conditions in India it is doubtful if the plans for the new Delhi will be carried out in their entirety in less than ten years. The work is progressing, and the Government House and the new buildings for the Secretariat are now 30 feet above ground level. The foundations have been laid for the Legislature Building, and work has been started on a temporary museum. The great waterways on either side of the long avenue have been formed, and the Grand Place is practically finished.



Plan shewing Floor Construction.
No 4 Floors thus



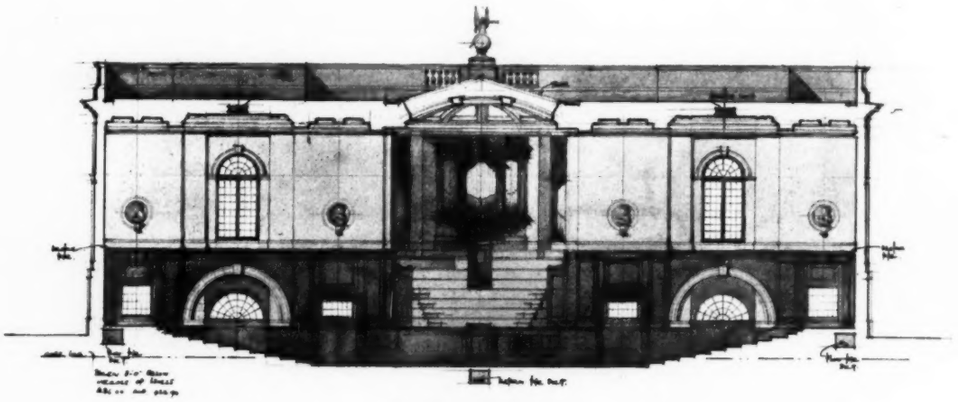
Longitudinal Section

A New Reinforced Concrete Factory.—MR. A. J. HOWCROFT, Architect. (*See p.* 413.)

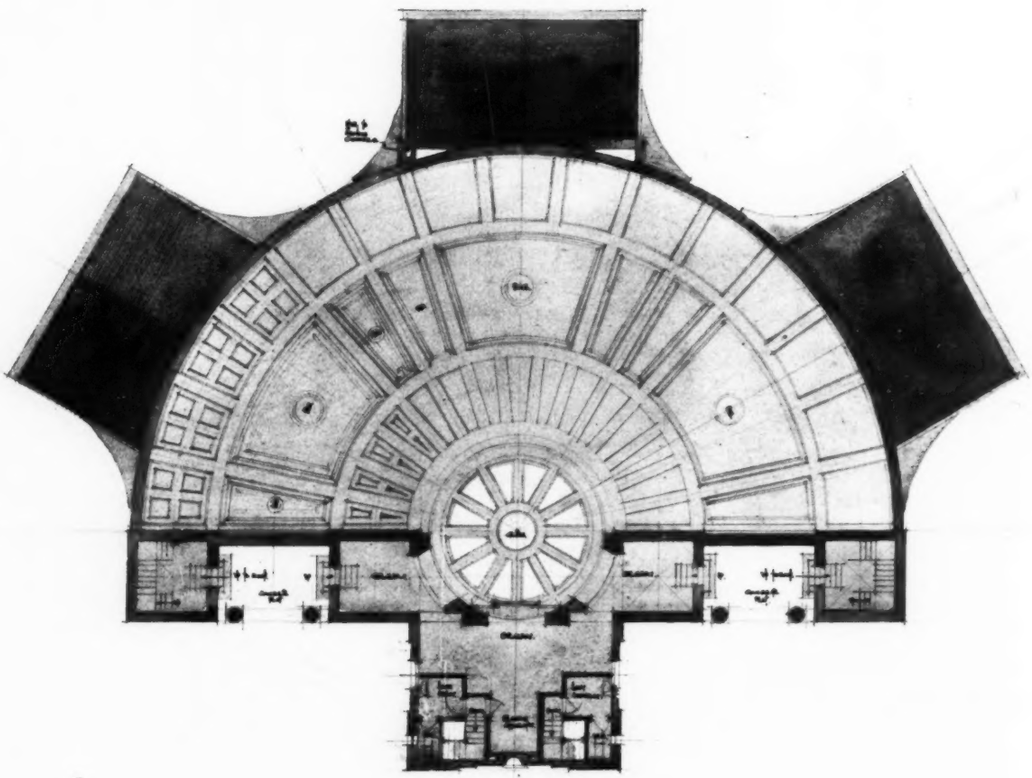
R. A. EXHIBITION, 1910.

BANK OF AFRICA, CAPE TOWN. CAPTAIN THOMAS A. SLADDIN F.R.I.B.A., ARCHITECT.

MARLBOROVGH COLLEGE WAR MEMORIAL.



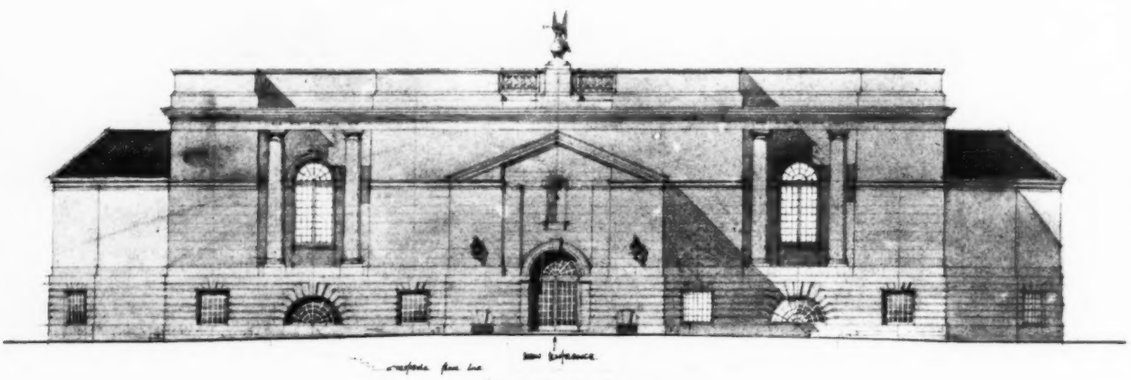
LONGITUDINAL SECTION.



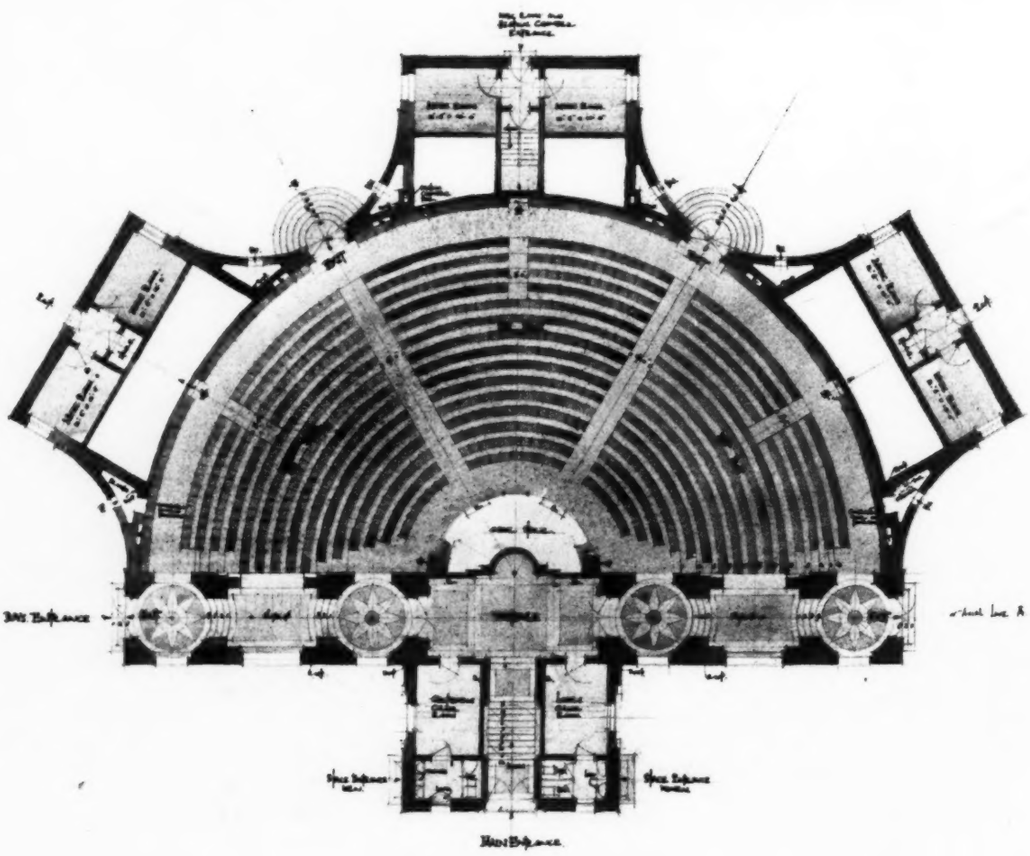
PLAN AT ORGAN CHAMBER LEVEL.

MARLBOROUGH COLLEGE WAR MEMORIAL COMPETITION. SECOND PREMIATED DESIGN BY MR. F. B. DUNKERLEY.

MARLBOROUGH COLLEGE WAR MEMORIAL.



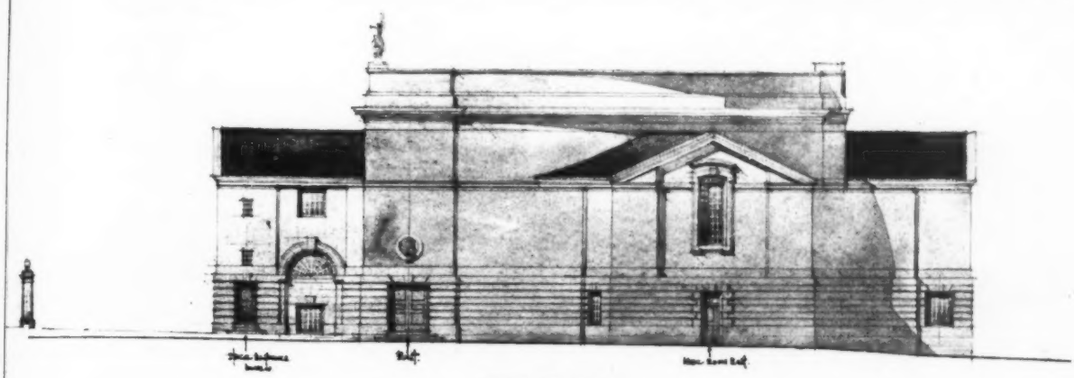
ELEVATION to BATH ROAD.



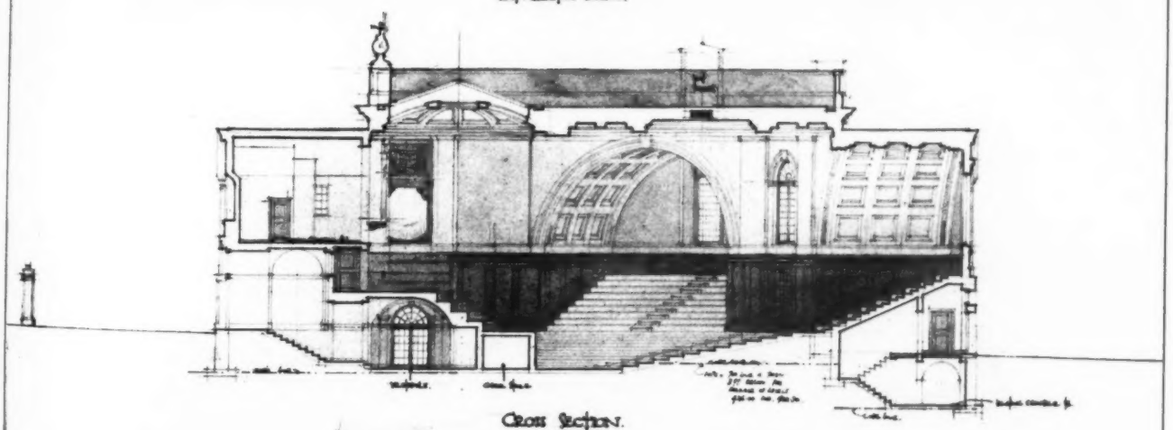
PLAN AT ENTRANCE LEVEL.

MARLBOROUGH COLLEGE WAR MEMORIAL COMPETITION. SECOND PREMIATED DESIGN BY MR. F. B. DUNKERLEY.

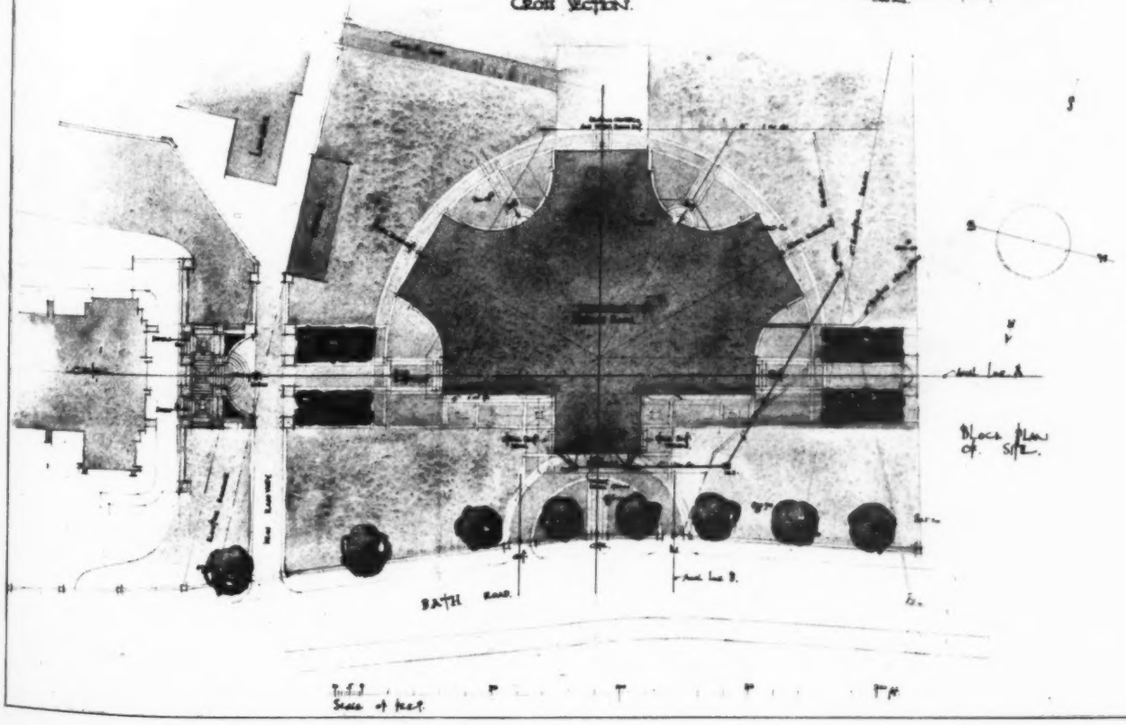
MARLBOROUGH COLLEGE WAR MEMORIAL.



WEST ELEVATION.



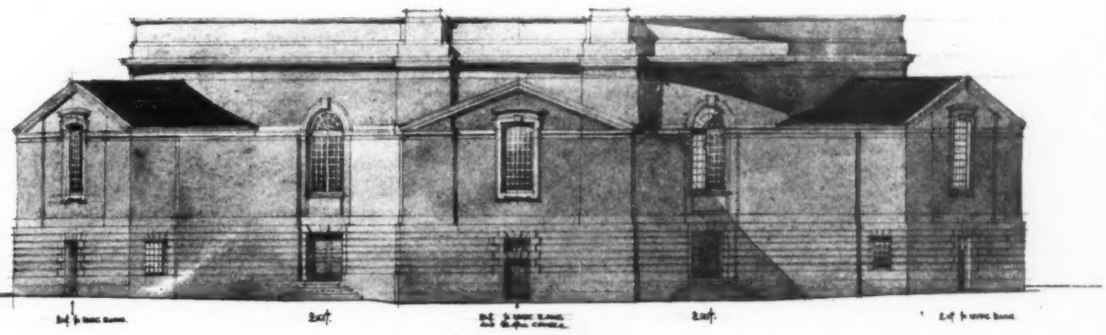
CROSS SECTION.



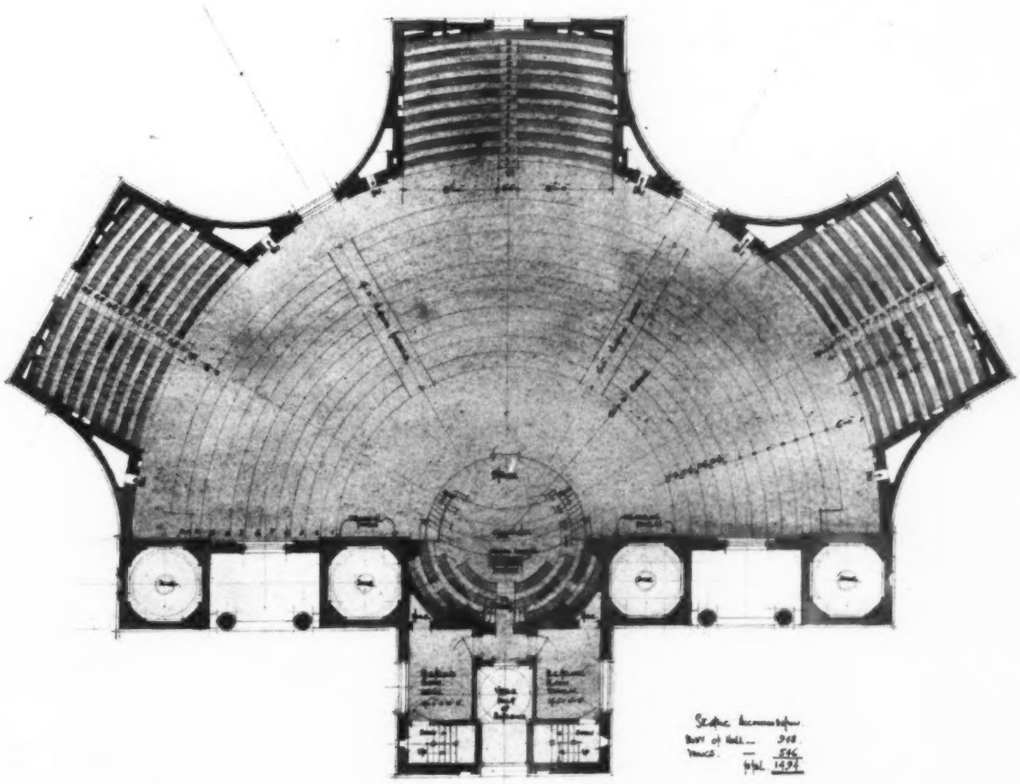
BLOCK PLAN OF SITE.

MARLBOROUGH COLLEGE WAR MEMORIAL COMPETITION. SECOND PREMIATED DESIGN BY MR. F. B. DUNKERLEY.

MARLBOROUGH COLLEGE WAR MEMORIAL.

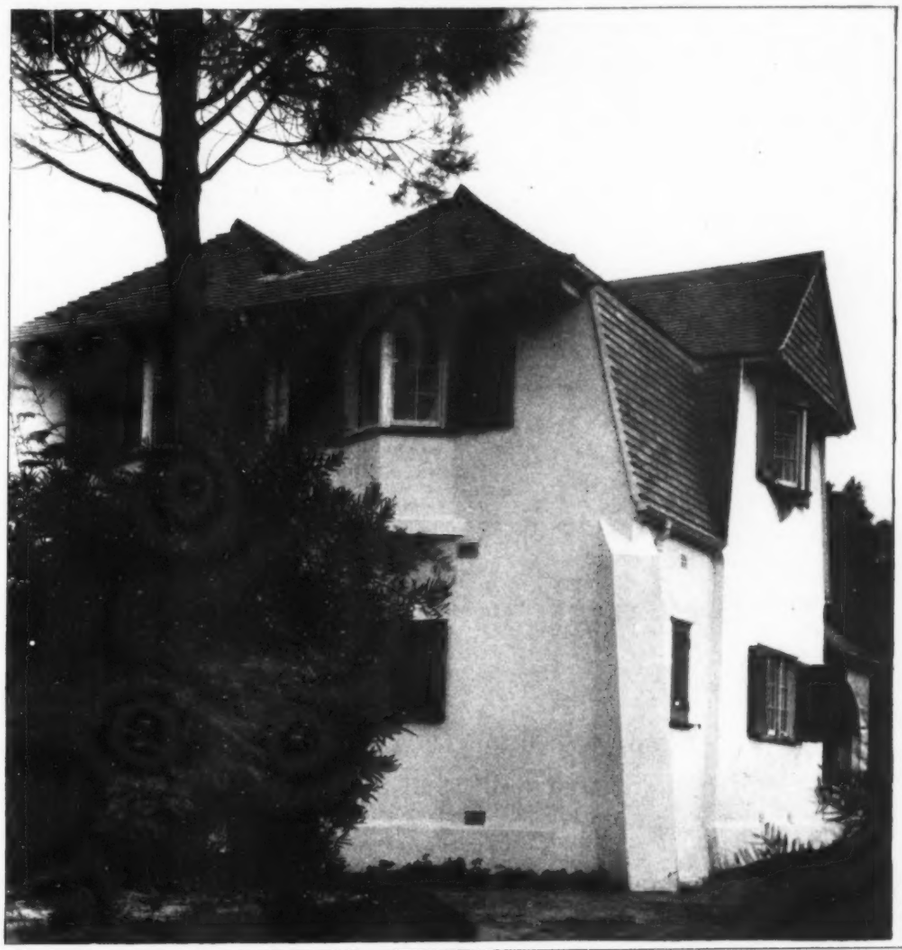


SOUTH ELEVATION.



PLAN AT STAGE LEVEL.

MARLBOROUGH COLLEGE WAR MEMORIAL COMPETITION. SECOND PREMIATED DESIGN BY MR. F. B. DUNKERLEY.



COTTAGE NEAR CAPE TOWN. CAPTAIN THOMAS A. SLADDIN, F.R.I.B.A., ARCHITECT.

COMPULSORY ACQUISITION OF LAND.

AN important point has been decided in the case, Percival and Another *v.* Peterborough Corporation (1921, 1 K.B. 414), in connection with the Acquisition of Land (Assessment of Compensation) Act, 1919. By section 2 it is provided: "In assessing compensation an official arbitrator shall act in accordance with the following rules." Rule 1 provides: "No allowance shall be made on account of the acquisition being compulsory"; rule 2 provides: "The value of land shall subject as hereinafter provided be taken to be the amount which the land if sold in the open market by a willing seller might be expected to realise . . ."; rule 3 provides: "The special suitability or adaptability of the land for any purpose shall not be taken into account if that purpose is a purpose to which it could be applied only in pursuance of compulsory statutory powers, or for which there is no market apart from the special needs of a particular purchaser or the requirements of any Government Department or any local or public authority"; and following on this rule, there is a proviso: "Provided that any *bona fide* offer for the purchase of the land made before the passing of this Act which may be brought to the notice of the arbitrator shall be taken into consideration."

This proviso was added to the Act in its passage as a Bill through Parliament (*The Builder*, September 26, 1919), and it is the effect of this proviso which formed the most important point in the decision referred to. The City Council of Peterborough desired to acquire some land from the appellants for a housing scheme, and after negotiations had taken place they made an offer for it which was accepted. This was before the Act came into force on September 1 in that year. A provisional agreement had been entered into between the parties that if the Local Government Board or other Government authority should not confirm the agreement by July 6, 1919, then the purchase agreement should be void. No such order was made, and the appellants were notified the agreement must become void. The respondents subsequently obtained an order of the Ministry of Health for the compulsory acquisition of the land, and on May 27, 1920, the arbitration was held under the above Act. Counsel for the appellants (the land owners) proposed to call evidence of the offer made by the respondents in the negotiations before the passing of the Act, but the arbitrator refused to admit the evidence.

On the appeal it was argued: (1) There was no offer, because under the agreement it was never absolute but provisional; and (2) that the proviso at the end of rule 3 was not of general application, but limited to the cases dealt with in that rule, cases of special suitability and adaptability. As regards the first contention, the court disposed of it by pointing out that the words in the proviso were "any *bona fide* offer," not, as would be necessary to support counsel's contention, any *bona fide agreement*. On the second point, the court held that the proviso was general in its application and was not limited to cases of special suitability and adaptability mentioned in rule 3. Thus the court held that the arbitrator was wrong in excluding the evidence, but the court pointed out that this only meant that the arbitrator must give consideration to the offer, but was not bound by it.

The Lord Chief Justice is reported as having said: "Presumably the arbitrator would treat the offer as having been made under conditions totally different from those which now exist and at a time when the restrictions imposed by this Act upon the acquisition of land and the payment of compensation therefor by a local authority did not apply, and he would take it into account or not as he pleased."

Mr. Justice Avory pointed out that the arbitrator had mistaken the question of the weight of the evidence for the question as to its admissibility in law.

The arbitrator had treated the evidence as inadmissible because amongst other reasons the circumstances were changed under this Act, and it was notorious that offers made before the passing of the Act were affected by other considerations than the market value, and particularly by the desire to avoid the expense, uncertainty and delay in settling the value by arbitration and the payment of compensation for forced sale; and the Lord Chief Justice expressed himself as much impressed by the reasoning of the arbitrator.

The case is one of difficulty, but perhaps we may venture upon the following suggestions as to its effect. The finding of the court that the arbitrator must admit the evidence of a former offer and give it consideration must mean that he must give it judicial consideration. Thus, if the offer was made and accepted by parties contracting on equal terms, well-qualified to know the value of the land, such an offer must surely be considered as having some effect on the award, even though some elements in it, such as the desire to avoid the then costly procedure, might be discounted. Thus, we submit, it appears that although the offer is not binding upon the arbitrator, yet it must be given judicial consideration by the arbitrator in assessing the value of the land under the provisions and rules laid down by the new Act.

GIRLS' PAROCHIAL CLUB HOUSE, CHISWICK.

ON Tuesday last, in connection with the Easter commemorations at Chiswick, the Queen Anne National School building was reopened as a Girls' Parochial Club House, after renovations and adaptations carried out at the cost of the Chiswick Charities Trustees, the owners of the property. The building skirts the south part of St. Nicholas Churchyard, close to the frequently visited monument of Hogarth, whose house is in an adjoining road. The different levels between the burial ground and Fisherman's-lane were sufficient to enable the architect, when he built the school in 1707, to arrange an upper as well as a lower ground floor. Needless to say, the ideas then prevailing as to the needs of a school differed entirely from present-day requirements. The premises have for a long while been neglected and very little used, but, notwithstanding this want of care and attention to upkeep, the mortar, bricks, and woodwork generally were so excellent in quality that after standing for over two centuries the building remained substantial and sound. Hardly any pointing was required, and the sashes, though light in scantling, for the greater part were easily restored. Some had to be entirely renewed, chiefly through wanton damage. The slates on the roof had to be stripped owing to the fact that the iron nails had rusted away, zinc pins being unknown in the time of Queen Anne. The only structural alteration needed was the cutting of one doorway, and yet the Club obtains an exceedingly convenient and suitable home.

The upkeep and conduct is vested in the Vicar and churchwardens. The upper large room with a porch into the churchyard is to be used for meetings and dances, a new floor being unavoidable. The staircase has been opened up and some old carved newels and turned balusters, brought from a house of similar date and now demolished, have been incorporated with good effect. The wicket to the stairs belonged to a contemporary tavern, and being like the rest traditional in spirit, these things naturally harmonise. Every care has been taken to follow out the spirit of the old work, the chief merit of which is its quaint simplicity. Below is a club tea-room, service-room, scullery, store-place, cloak-space, lavatory, and vestibule opening on to Fisherman's-lane, where the chief entrance is located. The place forms part of the few unaltered corners of the historic riverside village of Chiswick, and the site is at the western end of the Mall.

The builders were Messrs. Nichols & Sons, of Church-street, Chiswick, and the architect for the renovations was Mr. Maurice B. Adams, F.R.I.B.A., Chairman of the Chiswick Parochial Charities Trustees, who gave his services.

DILUTION IN THE BUILDING TRADE.

THE ballot of the members of the National Federation of Building Trades' Employers on the question of the admission into the building industry of 50,000 ex-Service men, to be trained as tradesmen, has resulted in 90 per cent. of the votes being in favour of the scheme. The Federation is now endeavouring to arrange a meeting with the representatives of the trade unions concerned to discuss the position.

The scheme is intended to apply mainly to young ex-Service men who have been for some time out of employment and have no regular occupation. In addition, it is to apply to ex-Service men now employed in the industry as builders' labourers. The scheme will be worked through local committees composed of representatives of the master builders' associations and the trade unions. If the trade unions do not co-operate in the formation of a joint committee, the National Federation of Building Trades' Employers will arrange for the local affiliated associations to appoint committees in each district which will be responsible for the selection of the men and the general supervision of the scheme in the area. The district committee will select suitable ex-Service men for training, and will advise as to the craft in which the man can be most suitably trained. A contract of service, valid for two years, will be entered into between the employer and the accepted candidate, subject to a break at the expiration of a probationary period of three months, and to termination thereafter, if either party is not observing its provisions. Provision will be made for assignment of the contract from one employer to another.

The contract will provide that at any time during its currency an employee will have the right to apply to his employer for a certificate of proficiency entitling him to a higher percentage of the district rate of wages than that laid down. The District Committee will supervise generally the execution of the contracts of service, and will deal with complaints.

Ex-Service men accepted under the scheme will be paid by the employers as follows:—

(*a*) First six months, 50 per cent. of the district skilled men's rate, plus 10s. per week.

(*b*) Next six months, 65 per cent. of the district skilled men's rate, plus 5s. per week.

(*c*) Next six months, 80 per cent. of the district skilled men's rate.

(*d*) Next six months, 90 per cent. of the district skilled men's rate, and thereafter 100 per cent.

Towards the payments made by the employer the Government will contribute in respect of each man accepted for training:—

(*a*) For the first 26 weeks 10s. per week.

(*b*) For the second 26 weeks 5s. per week.

The State contribution will be paid for a full week, even though the firm by whom the man is employed may, in fact, be working short time (provided that the man attends for duty on the days on which the firm requires him), but will not be paid for any week in which a man does not work at all. Provided that if during the first twelve months the employee receives from his employer a rate of more than 65 per cent. of the district rate, the State contribution shall cease from the date of receipt of the increased rate.

The National Federation of Building Trades' Employers has accepted general responsibility to the Government for bringing about the absorption of the desired numbers of ex-Service men and for their adequate training. It will arrange for regular records to be kept of the progress of the scheme, and, through the District Committees, will, in conjunction with the Government, exercise supervision over the execution of the contracts of service. The Government has already indicated that it will adopt the principles of the scheme in the case of building operations with which it is concerned.

In the House of Commons last week Dr. Macnamara said active steps were being taken to put the scheme into immediate operation.

THE BUILDING TRADE.

A LAND FOR CHRISTIANS.

By H. Bryant Newbold.

The late Lord Macaulay and Mr. Thos. Foster, of Burnley, would appear to be of one mind in maintaining that the first duty incumbent upon him who would write is that he must do so with a sufficient clarity that all who read may understand. And, indeed, the theory would seem to have its points; but even Macaulay oft presumed upon a certain intelligence in the minds of his readers. Mr. Foster states that I "continue," in "Christianity in the Building Trade," "criticisms of, and innuendos against, the operatives"; whilst he readily admits "that they (the operatives) have done things they ought not to have done and left undone things they ought to have done, but they are not alone in sins of omission and of commission." Now, it is just possible that others besides Mr. Foster may read a different meaning into my own words when I wrote: "In application to the present, this ('Monopoly') means that in the past the operatives were oppressed by a system of monopolised right in the building industry." But to me it appears to be only another and a more concrete way of saying that "the operatives were not alone in sins of commission." But when I continue, "That for any section of the community to endeavour to bring about for another section those very conditions which, when applied to themselves, they found to be intolerable, is illogical, unjust, intolerant, and not for a moment to be permitted," there can be no doubt in the mind of anyone that I mean exactly the same as does Mr. Foster, namely, that the operatives have done and would continue to do increasingly that which they ought not to do at any time whatever.

Possibly, Mr. Foster may be helped to a clearer understanding of why neither "Monopoly" nor "Christianity in the Building Trade" have anything to do with the question upon which the employees are being balloted; if he would so honour me as to re-read both articles, he would find that in neither of them is the "ballot" mentioned.

However, as Mr. Foster has broached the subjects upon which the vote is now an accomplished fact, and that by an overwhelming majority in favour, I would ask him if he can read any meaning into the following words other than the usually accepted English rendering:—

"(1) Are you in favour of admitting 50,000 ex-Service men into the industry?

"(2) Will you 'back up the Administrative Committee of the Federation in insisting on this admission?'"

Now I cannot read into these simple questions one single word more than is therein contained. Possibly this constant search for a "*double entente*" may in some measure explain a slightly clouded perception with regard to the meaning of "Monopoly" and "Christianity in the Building Trade." However, it is a strange fact that the very doubts which appear to be disturbing Mr. Foster's equanimity are those which would seem to be causing the operatives also some distress. Nevertheless, I am not a prophet and cannot foretell what the future may have in store for us all.

But of one thing there can be no doubt, and concerning which it needs no prophet to tell; and it is this—that no man, be he employer or employed, is entitled to one penny more than he earns. And for a man wilfully to limit his output, especially at a time of his country's need, is a criminal thing to do, and would, if he were in the Army, lead to but one end. And, strange though it may seem to recall the fact, there was not much "striking" in the Army. However, it is not in good taste to mention the war; it is a time we all do our best to forget, and it is this transformation that we are all engaged upon so earnestly at present—this formation of "a land fit for heroes to live in." And Mr. Foster asks, "what alternative proposals have they (the employers) for helping to discharge our obligations to those who went to fight for us who stayed at home?" Surely, and I speak solely as one of those who went, one way of helping to discharge obligations to those who went to fight would be to permit them to earn a living alongside us, and this by sharing in the building of the country's greatest present need—houses, wherein they and those who stayed at home may live. What alternative is necessary? In the very plainest English of which I am capable, I would say that to prevent those who went to fight from the right to earn their living is the most cowardly and shameful act which stains the dishonoured name of Socialism, which is but another name for Bolshevism and leads only to conscripted labour, as in Russia to-day. Possibly these words may be clear. Never has there been a greater act of cowardice than that of those who denied the right to work to those who returned too late from Army life. What words would fittingly describe him who, under shell fire, denied the shelter of a dug-out to his pal; with what execration would he be met? Yet, wherein lies the difference? Fabian theories may serve to still the voice of conscience in some; but no illogical disillusionment ever clouded for long the clear flame of truth. Honest work leads upwards toward the light, and thus only may we hope to live for ever—by we those fool-heroes or stay-at-homes.

However, my desire in this is identical with that expressed by Mr. Foster, and consists only of demonstrating that the sins of omission and commission may be laid at the door of both parties in equal share; that the way to a redress of grievances does not lie in one party adopting those very sins which in the other party they decry; but that the transformation may be assisted, and finally that condition so earnestly desired by all may be brought about—a condition wherein each man works for the benefit of his class, and wherein that class is recognised not as one section of the community but as embracing all mankind. Towards this end nothing could be of greater service than the cementing of those Joint Councils, already in being, on which sit representatives of all that is best in both sections, to legislate for the benefit of the whole. Indeed, as I have expressed elsewhere, if out of all this industrial strife, these unions and these federations, there should come that greater union, the realisation of the Unity of All Mankind, then may we honestly give thanks to the wondrous workings of the Great Arbiter of All Creation.

DAMAGE TO PROPERTY BY RIOT.

A recent decision of the High Court in the case Ford *v.* Receiver for the Metropolitan Police District (*Weekly Notes*, March 12) is of considerable interest in these days when mobs, either from levity or of malice, often injure property. In the case in question mere levity at the time of the peace celebrations in June, 1919, seems to have actuated a crowd of some 150 to 200 persons to do an act of wanton mischief, for they assembled with crowbars and pickaxes and took everything inflammable, such as floorboards and woodwork, out of a house which had been unused for some time, and made a bonfire in the street.

The action was brought by the owner claiming compensation under section 2 sub-section (1) of the Riot Damages Act, 1886, under which compensation is made payable out of the police rate where a house in any police district has been injured by any persons riotously and tumultuously assembled. No evidence was given of any threats or violence having been offered to any individual, but a man who lived next door to the house said in evidence that although the people concerned seemed very happy he was afraid to interfere with them. The court, in giving judgment, referred to a decision of a Divisional Court in the case Field *v.* Receiver of Metropolitan Police (1907, 2 K.B. 853), in which it was laid down that to constitute a riot five elements must be present: (1) the number of persons must be not less than three; (2) there must be a common purpose; (3) execution of a common purpose; (4) an intent on the part of the above persons to help one another by force, if necessary, against any person who might oppose them in the execution of their common purpose; and (5) force or violence, not merely used in and about the common purpose, but displayed in such a manner as to alarm at least one person of reasonable firmness and courage.

The first three elements being clearly present the court more particularly had to consider the remaining two, and came to the conclusion that the fourth element existed because the people were present with crowbars and pickaxes and there was no doubt anyone interfering with them would have been subjected to rough usage, and that the fifth element was also proved by the evidence of the neighbour. The judge held that the fifth element had given him the most difficulty, but he considered it was not necessarily absent because the people went about their business quietly so long as they were not interfered with, for that would probably be the case in all riots.

It will be remembered that at the time the suffragettes committed wilful damage the question was raised in connection with insurance as to what was the meaning of "civil commotion and rioting" (*The Builder*, July 4, 1913), but there was no concerted action in those cases at the time the damage was being committed and no tumult, as the women acted singly and the damage was held not to be covered by the above expressions in a policy of insurance. A direct incentive is offered to the public to restrain these acts of violence if it is realised that the damage will fall upon the ratepayers, and will have to be made good out of their pockets.

OBITUARY.

Mr. H. H. Marten.

We regret to announce the death, which took place on March 16, at Marseilles, of Mr. Harry Holdich Marten, of Tunbridge Wells, chairman of Messrs. Young & Marten, Ltd., builders' merchants, of Stratford. Mr. Marten, who was sixty-eight years of age, died suddenly whilst upon a short holiday. He possessed a remarkable insight into the possibilities of future development in the building trade arising from necessity or prospective demands. He was one of the original members of the Junior Constitutional Club, and retained his membership until his death.

The death has taken place of Mr. F. Hunt, a well-known Plympton (South Devon) builder, who for several years was chairman of the Plympton St. Maurice Parish Council, and represented the parish on the Plympton Rural District Council.

The death has occurred, in his 68th year, of Mr. J. Goulding, builder and contractor, of Blyth, Northumberland.

THE COST OF BUILDING IN SCOTLAND.

THE Government Committee of Inquiry into the High Cost of Building Working-Class Dwellings in Scotland held a further series of meetings in Edinburgh last week. Mr. G. W. Currie presided.

A number of witnesses were examined, including Mr. Fane (Director of Building Materials Supply), Mr. Folkard (Edinburgh representative of the D.B.M.S.), Bailie King (Chairman, National Light Castings Association), Judge Malcolm Stuart and Councillor Whitson of the Edinburgh Town Council, and Mr. Paul (Chairman, National Federation of Master Painters in Scotland).

The Director of Building Materials Supply stated that his Department was seriously hampered by the fact that the estimates of housing needs had been a fluctuating quantity. The original Government housing programme for England, for example, was estimated at 200,000 houses for the first year, but a short experience had shown that this was an impracticable programme. The same argument applied to Scotland, although in a lesser degree, and he had always regarded the Scottish programme as more practicable. The fluctuations which had taken place, however, had created serious difficulties for the D.B.M.S., as in order to ensure supplies at the right place at the right moment it was necessary to have fairly long notice. This applied particularly to bricks. There had, of course, been mistakes, but he considered that, in view of the very large scale of the operations of the Department, these mistakes had been trifling. The Department had been able, on the whole, to purchase materials at a very much cheaper rate than could have been done by private contractors. This was due chiefly to the fact that the Department could take a large output and could pay ready cash. In many cases, for example in the case of light castings, the prices paid by the D.B.M.S. were arrived at after an examination of costs. He disagreed with the findings of the Profiteering Committee on light castings. He had always found the National Light Castings Association exceptionally reasonable. Bricks had risen since 1919 from 52s. 3d. per 1,000 to 82s. 4d. The increase was due to increased wages, increased cost of fuel, freight, &c. The Department bought bricks wherever it could. Materials were, on the whole, becoming cheaper, and the removal of the Excess Profits Duty would have a beneficial effect in reducing prices. He considered that had the Department had more ample powers it would have been able to supply materials more quickly and more cheaply. The concentration of all purchasing in a Central Department which would have power to examine costs, &c., of materials would undoubtedly have been a more efficient instrument for economy. Various representations had been made to this effect, but the Government had not seen its way to sanction these powers. In regard to cement, the Department had so far refrained from purchasing foreign cement, although strong claims in respect of cheapness and efficiency were made by foreign suppliers.

Bailie King said the National Light Castings Association was founded in 1911, when the light castings industry in Scotland was seriously threatened by American and German trusts. It was a defensive organisation originally, and had it not been formed the light castings industry in this country would have been wiped out by the foreign trusts. Thanks, however, to the Association, the industry was now well established and secure in this country. The Association controlled 90 to 95 per cent. of the light castings output, and although this control was nearly absolute the Association functioned in the interest of the country as well as the trade. It had an agreement also with the merchants' association under which 90 to 95 per cent. of the merchants throughout the country worked with the Association. He denied the charges made in the report of the Profiteering Committee, and explained that the basis of the pool was now different from that stated in the Profiteering Report. This change had not been introduced as a result of the Profiteering Inquiry, but had been under consideration by the Association for a considerable time. The charge made in the Profiteering Report was to the effect that by the system of "pooling" progressive manufactures were discouraged and an actual penalty put upon large output by individual manufacturers. He did not think the old system had this effect, but certainly the new system had not. It was a progressive allocation based on an average output of three or four years, and therefore the datum line of output changed with every increase or decrease of the manufacturers' output per annum. The prices paid for castings for housing schemes were very much lower than could have been obtained had the Association not been in existence. In regard to the output of labour, he stated that it would be possible to obtain as large an output per man for the 47-hour week now worked as was obtained for the 54-hour week which had formerly been the hours for the industry.

Judge G. Malcolm Stuart gave evidence based on his experience of the Edinburgh housing schemes. He considered that the policy of limiting the subsidy, etc., to three years had the direct effect of raising prices, as nearly every local authority had endeavoured to build as many houses as possible regardless of cost so long as the consent of the Board of Health could be obtained. The financial basis of the scheme, in his opinion, was wrong. The four-fifths of a 1d. rate to which the liability of the local authority was limited was exhausted by the erection of a comparatively small number of houses, and it was therefore not in the direct interest of the local authority to restrict the number of houses or to economise in the construction of houses after the limit was reached. That absence of financial interest in the schemes had tended to make local authorities direct their energies more to getting houses built quickly and substantially than to economy. He was in favour of an extension of the subsidy period, provided that the number or magnitude of approved houses or schemes sanctioned was not appreciably increased and that the rate of building was spread over the extended period. He considered the local authorities' share of the loss should no longer be limited to the proceeds of four-fifths of a 1d. rate, and the original proposal af the Government that local authorities should bear 25 per cent. of the loss would have tended to economy and prudence. As the houses had to be taken over ultimately by the local authority it was obvious that the local authorities' interest lay in building substantial houses in order to provide themselves with adequate security for their future liabilities. The Scottish Board of Health officials had effected many economies, but in view of the local authorities' interests in substantial building it was not difficult for the Board of Health officials to pick out extravagances. He had no knowledge of any instance of the Board's interference having caused an increase in the cost of schemes. Questioned on the standard of accommodation and construction enforced by the Scottish Board of Health, he stated that it was in the main satisfactory, but in view of the demand for two-room houses, there should have been sanction given to proposals to build these. There were many people for whom a three-apartment house was not suitable, and who would have been better suited by a two-apartment house. He did not consider that the cost of building could be reduced by local authorities themselves undertaking the duty of providing necessary materials, i.e., by the establishment of brickworks, etc. He would, however, like to see the Building Guild started in Edinburgh. In answer to a question on profiteering in materials, he stated that power to examine the costs and balance sheets of contractors and others would be of little avail unless the inquiry were accompanied by power to determine a just price. He was of opinion that in many cases tenderers had conferred together before submitting tenders to local authorities, and quoted examples in which a number of tenders had been received for work at identical prices. He was not surprised when informed that the Board of Health had recently received tenders showing a reduction of £200 per house in the prices which had been quoted for similar houses up till a week or two ago, and he thought a further fall could be anticipated. That fall was due to the decreased costs of materials and to the prospective decline in wages. Perhaps the removal of the Excess Profits Duty was also a factor in this decrease. In regard to wages, he stated that the flat rate of payment for all the building trades was not justified. He thought land was obtained at a reasonably low rate, although professional valuers, by failing to take into account the changes in value of land through the operation of the Housing, Town-planning, etc., Act, had tended to keep the prices of land high.

Councillor Whitson stated that he agreed that the principal causes of the high cost of building were: (1) Scarcity and consequent dearness of materials; (2) increased wages; (3) increased freights; (4) decreased output of labour. He considered that the position was improving, and that the £200 fall in certain cases which had already taken place would continue and that a further fall might be expected very soon. He was in favour of an extension of the subsidy and the spreading of contracts over a longer period, which would in the long run be profitable to the State. With the return of normal conditions the extension of the subsidy period would help materially in reducing prices. He was anxious to see Government control removed wherever possible, but he considered that the provision of houses for working classes was in a special category owing to the impossibility of private enterprise overtaking the need. He considered that the dual control by the Board of Health and the local authority had tended to extravagances in many directions, although he paid a tribute to the efficiency and value of the services rendered by the Board of Health officials. The dual control, however, had led to much friction, due to the natural desire of the local authorities to obtain as much as possible and to the natural desire of the Board on the other hand to restrict the State's liability as far as possible. It would have been more efficient if the Board of Health had undertaken the execution of schemes itself and had merely consulted local authorities as to local needs and feeling. At present the executive power was vested in the local authority, but the Board of Health interfered at every stage. He advocated that this new arrangement should be adopted in certain areas where schemes had not advanced to any extent. He thought that now prices were dropping some strenuous effort should be made to obtain the advantage of the fall for the local authority. He did not think the Department of Building Materials Supply had been of any value in the State housing schemes, and he advocated its abolition at the earliest possible date.

Mr. Paul said painter work represented approximately 2 to 3 per cent. of the total cost of a working-class house. There had recently been a sharp fall in the prices of materials, turpentine having fallen from £95 per ton to £60 per ton, and linseed oil from £90 to £35, which were practically the pre-war prices. These prices, however, might rise, as it was not known how much the fall was due to the present slump in trade and the anxiety of suppliers to get rid of stocks. Wages of painters had recently advanced again, but in view of the slackness in the trade, due to the reluctance of customers to undertake work at the present high rates, wages would probably fall. He thought that on the whole the workmen were giving a fair day's work. He did not consider that the specification for painter work laid down by the Board of Health could be further reduced, as it was as lean as it could possibly be. Painters, on the whole, found it more profitable to do almost any class of work other than housing scheme work.

THE MEASURE OF OUTPUT IN BUILDING.

(*Concluded from page* 387.)

We give below an abstract of the concluding portion of Mr. T. Sumner Smith's paper on "The Measure of Output in Building," together with a report of the discussion which followed :—

Management.

Speaking generally, management in the building industry operates through three channels, viz., (1) office staff, (2) works staff, (3) outside jobs staff; though, in some cases, (2) and (3) may be controlled by one subordinate head.

There are too many crudities and rule-of-thumb methods and obstacles in the building trade to give management a real chance of displaying its possibilities, and all tend to retard production. The three outstanding features are :—

(1) Standardisation and mass production.
(2) Design and control.
(3) Estimating and costing.

With regard to the first, there are a number of things that could be standardised without in any sense offending æsthetic taste. A good and beautiful thing, no matter how often repeated, is not a loss but a gain. Skirting, picture moulds, and architrave moulds from approved designs could be repeated and a selection made and used in almost every job, so that during slack periods these could be made for stock. Doors, windows, cupboards, mantelpieces and the like could be treated in a similar fashion. Many other things could be standardised—in a large measure, house building—and in this way mass production could be fostered with a corresponding increase in output and reduction in cost. Too many finicking nothingnesses are put into many buildings, such as a variation for every kind of moulding, whereas a selection from a few choice designs should satisfy the most fastidious and serve all practical purposes.

As regards design and control and comparing the engineering trade with the building trade, we find that in the former the general practice is that they make their own drawings, settle the details and control the policy; whereas in the building trade builders are hampered in a great number of cases by incomplete drawings and lack of details supplied by architects, preventing the planning of work ahead. Sometimes the scheme is not thoroughly matured or fully developed until the work is well advanced, and this often seriously affects the general policy of directing and organising the work. The fruits of this short-sighted policy are seen in the number of constructional firms and reinforced concrete specialists that have sprung up of late, doing the combined work of both architect and builder. However, should this method lead to efficiency and economical building, then it may be taken for granted that it will stay on and multiply, eventually becoming a serious competitor to the profession and trade.

The methods of estimating building works are entirely out-of-date, generally by rule-of-thumb, and, correctly speaking, should be designated "guesstimating." Up to quite recently proper costing was so little known in the building trade as to be almost negligible. The ordinary system of quantity surveying is by far the greatest cause of any for the defects in estimating, and keeps back the installation of costing systems. It will be found that the practice in the best engineering works is that they estimate the cost of materials from their own particulars of quantities of materials of each component part as distinct from an estimate of the time it will take to do the job, and then the various on-costs are added to the whole. The ordinary system of quantity surveying in vogue in the building trade lumps all these together, which makes it practically impossible to formulate a correct estimate without a minute analysis of the component parts of each item—a colossal task. This will be quite clear when it is considered that almost every item contains two variable units—material and labour. Again, many tems contain different kinds of materials, such as will be found in brickwork, slating, and plastering, and these are expressed in terms different from those by which they are purchased. This involves the conversion from terms of purchase into terms of measurement when estimating, and back again into terms of purchase when ordering.

Before anything can seriously be attempted in this direction it would seem to necessitate the establishment of constants for materials, *i.e.*, materials converted from measurement terms into purchase terms.

With approved and standardised tables of constants for materials, bills of quantities could be expressed in terms of purchase for materials, and in measurement for labour. The various on-costs as shown in table No. 1.

From this table it will be noted that these bills of quantities, in addition to being both practical and universal in application, can serve four purposes : first, as a basis for an accurate estimate of the intended structure; secondly, for ordering materials and their assembly on the site at the proper time; thirdly, for analysing and recording costs; lastly, as a schedule of prices for the adjustment of variations on the contract in an expeditious and equitable manner.

By the adoption of practical bills of quantities costing could be used to check estimating, and data obtained therefrom would be a valuable guide in future estimating. Table No. II may be taken as an illustration of its possibilities.

It is impossible by costing to arrive at the time taken for each unit of labour for any specified task. Then, by means of costing with the resultant establishment of constants of labour, payment by results could be adopted, as they could form the basis of rate-fixing,

Table No. I.—A few examples of items in practical Bills of Quantities.

Quantity or Measure.				Description.
Tons.	cwts.	qrs.		CONCRETER.
27	12	—	weight	1½″ to 2″ aggregate, as before specified, in foundations to walls and floors.
9	15	3	,,	⅜″ to ¾″ aggregate, as before specified, in sills, lintels, and brackets, &c.
15	1	2	,,	Clean, sharp sand, as before specified.
—	16	3	,,	Granite chippings, as before specified.
10	11	3	,,	Portland cement, as before specified, in concrete foundations, floors, &c.
42	14	2	,,	Labour only mixing concrete in the proportion of 5 parts broken bricks to pass a 2″ ring and to be retained on a 1½″ ring, one part sand, and one part cement.
11⅓	yards		Cube	Labour only laying concrete in foundations to walls, 6″ thick, including levelling and well ramming.
122	,,		Super	Labour only laying concrete to solid floors, 4″ thick, true and level.
				Common Brickwork.
43,020	—	—	No.	Common bricks, as before specified.
740	—	—	,,	Selected common facing bricks.
41,225	—	—	,,	Labour only setting common bricks in lime mortar.

Table No. II.—Showing the relative value in cost of materials and labour for cottages, and the ratio in percentage of time occupied in each trade.

	Labour.			Materials.	
	Ratio in percentage of time occupied.	Percentage of costs.	Ratio in approximate value per £.	Percentage of costs.	Ratio in approximate value per £.
			£ s. d.		£ s. d.
Excavator and Drainer	6·38	2·47	6	·53	1½
Concreter	4·81	1·84	4½	2·00	4½
Bricklayer	39·38	17·26	3 5½	13·16	2 7½
Carpenter and Joiner	31·64	15·52	3 1	20·84	4 2
Slater	1·12	·58	1½	2·31	5½
Plumber and Glazier	3·89	1·74	4¼	5·74	1 2
Plasterer	10·51	4·95	1 0	2·10	5
Painter	2·27	1·05	2¼	·47	1
	100%	45·41	9 1	47·15 45·41	9 5 9 1
The remaining costs being made up as follows :—					
Insurance				1·92	4½
Plant				·87	2
Water				·15	½
Temporary Lighting, &c.				·15	½
Sheds				·63	1½
Stationery, &c.				·35	1
Rent, Rates, Taxes, &c.				·41	1
Staff Salaries				2·96	7
				100%	£1 0 0

which if founded upon the principles of equity should assure success.

Discussion.

The chair was occupied by Mr. A. Alban Scott, who, in opening the discussion, said he did not agree with all the lecturer had said, but the paper would be helpful in arriving at what he hoped would eventually come about, namely, a proper costing system for building contractors. The present systems were hopelessly out of date, and a great deal of the present trouble regarding the excessive cost of building could be traced to that cause. Architects were also to blame because they did not always give out proper drawings. The building owners were, however, often the greatest offenders, in changing their minds during the course of the erection of a building.

Mr. J. E. Powell said there was no doubt that output could be speeded-up to such an extent that it became dangerous, but, generally, that rate of output was avoided altogether nowadays. But quick output did not necessarily mean danger to the operative.

Mr. Nicholson said the examples given in the paper relating to the engineering industry would not always be applicable to the building industry. It was not the desire of the master builders or contractors to pay the same rate of wage to all workmen, whether good, bad, or indifferent; but owing to the trade union rules at present in force the good workman had to be paid extra "on the quiet," for if he worked too hard he would be told that he was doing someone out of a job. That was an entirely wrong point of view, because if the cost of houses were cheapened the demand would be doubled. With regard to Mr. Sumner Smith's system of taking quantities, he did not think quantities needed elaborating in that way.

Mr. H. J. Leaning, F.S.I., said he did not think the system of costing as outlined by Mr. Sumner Smith would be suitable for building, especially big buildings, although a thorough costing system could be applied to the erection of small houses. The present method of taking quantities had been built up as the result of custom, and it would be very difficult and expensive to alter that system throughout the country, and it would lead to great confusion.

Mr. E. J. Sadgrove said there were a number of things in the paper with which he could not agree. The poaching on the legitimate province of the architectural profession by the specialist firms of constructional engineers would not last much longer. The unification of the architectural profession was within measurable distance of being an accomplished fact, and when that came about no one except a properly trained architect would be allowed to practise architecture or use the word "architectural" in connection with his business.

The Chairman said the only reason why the specialist firms had progressed was because they advertised, and he was not sure that, when the unification of the profession came about architects would not have to advertise. It was appalling that there was no proper costing system in the building trade, and it would be well, as Mr. Sumner Smith had suggested, to examine the systems in use in other industries.

In reply to the discussion, the lecturer said there was already a Committee in being to consider a standard method of quantities for use throughout the country, and if its recommendations were adopted the confusion which had been referred to in the discussion would come about. Why not, therefore, try a new system altogether?

Ulster Architectural Atelier.

An Architectural Club has been formed in Belfast, under the name of the Ulster Architectural Atelier, which will be affiliated with the Ulster Society of Architects.

THE COST OF BUILDING MATERIALS.

The Sectional Committee of the Building Materials Sub-Committee appointed by the Standing Committees under the Profiteering Act to report on the conditions governing the supply of drain pipes, flooring and roofing tiles and building stone, has now issued its report. The main findings of the Committee are as follows:—

Drainpipes.—(a) There are several associations in the drainpipe trade, of which the principal is the Midland Pipe Association. These associations are not actually affiliated, but work together.

(b) The Midland Pipe Association fixes minimum selling prices and the maximum discounts and rebates to be allowed by its members.

(c) The system of increasing prices proportionately with costs of labour, fuel and materials may have a tendency to increase prices unduly, having in view the possibility of reduced costs accruing to manufacturers in the form of improved output, methods of manufacture, &c.

(d) A consumer is unable to effect a saving when purchasing drainpipes through the Association's trade channels, and having due regard to the position of the builders' merchant, some benefit should be given to the consumer when purchasing in large quantities direct from the manufacturer.

(e) The manufacture of drainpipes is carried on in conjunction with many other commodities, such as bricks, pottery, &c., and in the figures submitted to us by manufacturers, trading account figures for their many departments were not segregated. We are therefore unable to report as to profits made in this particular branch of the industry.

The price of drainpipes has increased to from 266 to 359 per cent. as compared with pre-war prices, according to quality, size, &c.

Flooring and Roofing Tiles.—(a) This trade is largely controlled by the Glazed and Floor Tile Manufacturers' Association and the Association of Roofing Tile Manufacturers. Both fix minimum selling prices and the maximum discounts and rebates to be allowed by manufacturers.

(b) The trade has been seriously affected by the war, and the total losses incurred have amounted to many thousands of pounds. From the figures submitted we are satisfied that the profits now being made are not unreasonable, and we have no evidence to show that the trade associations are operating against the interests of the consumer.

Flooring tiles have increased to from 112 to 193 per cent. above pre-war prices, and roofing tiles to from 227 to 257 per cent., according to quality, size, &c.

Stone.—There are many associations in existence in the stone trade. We have no evidence to point to any monopolistic tendencies, and we are of opinion that prices will be kept within reasonable limits, having in view the alternatives that can be used in construction.

Stone has increased to from 100 to 294 per cent. above the pre-war price, according to quality, &c.

Trade Combines.—The Committee suggests that where there are associations controlling 60 per cent. or more of an industry steps should be taken to safeguard the interests of the community. They, therefore, suggest that every such association should be required to obtain from its members, and at the end of each twelve-monthly period publish, a statement showing:—

(1) The average trading profit and the average net profit in relation to the turnover of the industry in so far as it is covered by such association.

(2) The average ratio of turnover to capital.

(3) The average wages earned per hour of skilled, semi-skilled, and unskilled labour.

The Department of Building Materials Supply.—The Committee regrets that the original prices agreed upon by the Department of Building Materials Supply soon after the Armistice were agreed upon without proving by costings that the basis of prices was reasonable. While in the initial stages this department may have secured building materials at a lower rate than current, the Committee is of the opinion, from the evidence, that this does not apply under present conditions, and the buying or ear-marking of large quantities of materials, upon which in many cases payment on account is made while the material remains on the manufacturers' premises, has a tendency to hold prices firm at the highest level.

REGISTERING DESIGNS.

The case of Gunston *v.* Winox (*Weekly Notes*, February 5) shows the necessity for registering designs before dealing with them. The plaintiff had designed a showcard as an advertisement, and had submitted it to the defendants' manager for inspection, and had made a slight alteration in it at his suggestion. Subsequently the defendants had informed the plaintiff that they did not intend to order copies of the design. At that time the design was not registered. Three months or so later the plaintiff offered the design to another firm, who accepted it and an estimate for a number of copies, and they wrote: "It is also to be understood that we have the copyright of this sketch, and as arranged with your representative you will have this done for us and any small fees in connection therewith we are willing to pay." The design was still at that time unregistered, but shortly after that it was registered. In the meantime the defendants had brought out and published a showcard which was a colourable imitation of the plaintiff's card, and the plaintiff brought this action to restrain the infringement of his design.

Section 55 of the Patents and Designs Act, 1907, provides that: "The disclosure of a design by the proprietor to any other person in such circumstances as would make it contrary to good faith for that other person to use or publish the design, and the disclosure of a design in breach of good faith by any person other than the proprietor . . . shall not be deemed to be a publication of the design sufficient to invalidate the copyright thereof if registration thereof is obtained subsequently to the disclosure or acceptance." To understand this case it must be appreciated that the defendants' conduct was not the subject of the decision, although the Court of Appeal passed some very stringent comments upon it, but the point raised in the case was whether what had occurred subsequently between the plaintiff and the other company constituted a prior publication so as to invalidate the registration.

To decide this point it was necessary to determine whether what had occurred between these parties would come within the provisions of section 55; that is to say, had the design been disclosed to the other company in such circumstances as would make it contrary to good faith for them to use or publish the design had they wished to do so? The Court of Appeal, in considering this question, indicated that if the effect of the correspondence had been that the company desired the copyright, which they could not get without registration, then they would have been under an obligation in good faith not to disclose it, but the Court held that in fact both parties thought there had been registration, and the correspondence only related to the transfer. Therefore, as the company would have been under no obligation not to disclose the design had they wished to do so, this amounted to a prior publication, and the action for infringement against the defendants would not lie.

The Court expressed regret at having to come to this conclusion, and it will be observed that the effect of the decision is that the perfectly regular transaction carried on in all good faith between the plaintiff and the other company invalidated any claim of the plaintiff as against the defendants.

STAFF DINNER.

A very successful dinner, given by Messrs. Alex. Maclean, M.A., V.P.R.B.A., and Mr. H. H. Millett, Directors of Messrs. Tredegars, Ltd., the well-known electrical engineers and contractors, of 5–9, Brook-street, W.1, was held at the Florence Restaurant, W.1, on Tuesday last week, in order that the staff might meet Mr. Norman E. Bartlett, the Chairman and Governing Director of the firm. Sir Herbert Bartlett, Managing Director of Perry & Co. (Bow), Ltd., was also present.

Several speeches were made after dinner, the keynote of them all being the necessity for pulling together and co-operation in order to achieve the best results for both the management and the employees.

Mr. Alex. Maclean, who occupied the chair, mentioned that the Queen was a frequent visitor to the showrooms of the firm, and took a considerable interest in the artistic electrical fittings manufactured by Tredegars. He also referred to the great progress of the firm since its inception eight years ago, and attributed that success to the high quality of their manufactures. He likened the firm to a battleship, the officers and crew of which all pulled together in a common cause for the common interest of all. It was, he said, not so much a man's duty to his employers to co-operate as his duty to his fellow men.

Mr. Norman E. Bartlett said it was the intention of the directors to maintain the high standard which had always characterised Tredegars' productions, and urged the staff to bear in mind that the success of the firm, and therefore of all the employees, depended on the reputation for quality that had been established being kept up. Such a reputation was worth living up to, and if that were done Tredegars would go a long way in the future. At the same time, his position as Chairman was made a very responsible one, and he appealed to the staff to help him to keep up the firm's reputation.

Mr. H. H. Millett proposed the toast of "The Visitors." He extended a hearty welcome to those present, and hoped the function, which was the first held by the firm, would become an annual affair.

During the evening, several sympathetic references were made to the late Chairman, Mr. Arthur Bartlett, who died in 1918.

The dinner was followed by an excellent musical entertainment.

"Luxury" Building.

Coventry City Council last week received the resignation of the whole of the members of the Production Committee, the members stating that, having regard to the attitude of the Council on certain of their recommendations, they had no other alternative. They reminded the Council that the Production Committee were appointed for the express purpose of advising the Council in regard to the exercise of their powers as to the regulation of building operations. The Committee consisted not only of members of the Council, but also of representatives of the local building employers and building operatives, and the members devoted much time and thought to their duties. They felt their recommendations were entitled to greater consideration from the Council than they had received. It seemed that if the Council had arrived at the opinion that it was no longer desirable to exercise the powers of the Housing (Additional Powers) Act it should have given an instruction to that effect, instead of leaving the Committee to present recommendations only to be rejected. They did not feel any useful public purpose would be served by the Committee continuing its work. In the discussion which ensued it was pointed out that the Council in not adopting some of the recommendations of the Committee, recognised that the conditions had altered since the appointment of the Committee and that buildings necessary for the extension of the trade and commerce of the city might now be proceeded with.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Accrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Altrincham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Barnsley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Barry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/9	
Bath	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bedford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	2/0½	
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/1	
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Blackburn	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Blackpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bolton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bournemouth	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bradford	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	
Bridgwater	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Brighton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bristol	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Burnley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/0–2/0½	
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/–	1/9	
Cambridge	2/–	2/–	2/–	2/–	2/–	2/4	2/4	2/1	
Cardiff	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/8	
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/9	
Chelmsford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cheltenham	2/–	2/–	2/–	2/–	2/–	2/–	2/–	2/0–2/0½	
Chester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/9	
Colchester	2/–	2/–	2/–	2/–	2/–	2/–	2/–	2/1	
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/10½–1/11	
Crewe	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/1	
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Doncaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/1	
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
East Glam. and Mon. Valleys	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Exeter	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Gloucester	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Grantham	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/3	2/1	
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Guildford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Harrogate	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Hereford	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hull	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Ipswich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Lancaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Lincoln	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Llanelly	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
London	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Loughborough	2/4	2/4	2/4	2/4	—	2/4½	2/3	2/1	
Luton	2/–	2/–	2/–	2/–	2/4	2/4½	2/4	2/1	
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/9	
Manchester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/8	
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½	2/0–2/0½	
Merthyr Tydfil	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newport, Mon.	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Norwich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Oakham	2/1	2/1	2/–	2/1	2/1	2/1	2/1	1/10	
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Plymouth	2/1	2/1	2/1	2/1	2/1	2/1	2/–	1/10	
Pontypridd	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Portsmouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Preston	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8	
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½	1/9	
Southport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Stroud	2/–	2/–	2/–	2/–	2/–	2/–	1/11½	1/9	
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Swansea	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Taunton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Torquay	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½	1/11½	
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Wolverhampton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

April 4.—**Chingford.**—Houses.—Erection of 30 houses on Little Bull Field Estate, King's-road, and 24 houses on Butcher's Field, King's-road, for the Chingford U.D.C. Messrs. Gunton & Gunton, architects, Finsbury House, Blomfield-street, E.C. 2.

April 4.—**Church Fenton.**—House.—Erection of eight-roomed house at Church Fenton. Mr. J. A. Blakeley, Grove House, Church Fenton.

April 4.—**Faversham.**—Houses.—Erection of eight houses at Preston-avenue, for the T.C. Mr. S. P. Andrews, Borough Surveyor, 20, West-street, Faversham.

April 4.—**Hertford.**—Painting.—For painting and decorating at the public library. Borough Surveyor, The Castle, Hertford.

April 4.—**Hindley.**—Houses.—Erection of 34 houses for the U.D.C. Mr. O. P. Abbott, Surveyor, Council Offices, Hindley. Deposit £3 3s.

April 4.—**Hungerford.**—Houses.—Erection of 10 houses each at Eastbury and East Garston, for the R.D.C. Mr. H. W. Smith, architect, 57; High-street, Oxford. Deposit £1 1s.

April 4.—**Mountain Ash.**—Conversion.—For converting premises in Cliff-street, Darran-las, Mountain Ash, into shop premises, for the Cwmbach-Aberaman Co-operative Society. Messrs. T. Roderick & Sons, architects, Clifton-street, Aberdare.

April 4.—**Risca.**—Houses.—Erection of 118 houses at Ty Isaf, Pontymester, for the U.D.C. Mr. A. J. Dardis, Architect, Council Office, Risca. Deposit, £2 2s.

April 4.—**Various Places.**—Painting. — Cleaning and repainting station buildings, bridges, &c., at the following places:—(14) Stroud, Stonehouse, &c.; (15) Notgrove, Andoversford, &c.; (16) Abergavenny, Tram Inn, &c.; (17) Adderbury, Bloxham, &c.; (18) Banbury; (19) Cropredy, Claverdon, &c.; (20) Oakengates, Audlem, &c.; (21) Birmingham (Snow Hill); (22) Stourbridge and Halesowen; (23) Wolverhampton; (24) Birkenhead and Liverpool. Office of the Engineer at Gloucester for Contract Nos. 14 to 16, at Wolverhampton for Contract Nos. 17 to 23, and at Shrewsbury for Contract No. 24.

April 4.—**Whitley Upper.**—Cottages.—Erection of 10 cottages at Silley-lane, Grange Moor, for the U.D.C. Messrs. Abbey & Hanson, architects, 11, Cloth Hall-street, Huddersfield.

April 5.—**Dumbarton.**—Houses.—Erection of houses under third development scheme of the T.C. Mr. Wm. A. Macartney, Burgh Engineer, Dumbarton.

April 5.—**Glasgow.**—Glazing.—For the glazier work in connection with the extension of the municipal buildings. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow. Deposit £5.

*April 5.—**High Wycombe.**—Houses.—Erection of 46 houses, for the Wycombe R.D.C. Mr. Chas. H. Wright, 5, Crendon-street, High Wycombe.

April 5.—**Liskeard.**—Additions.—Additions to the Cottage Hospital. Mr. H. R. Venning, architect, Greenbank-lane, Liskeard.

April 5.—**Nottingham.**—Painting.—Painting of Laundry Block at the City Isolation Hospital, Bagthorpe. City Architect's Office, Guildhall, Nottingham. Deposit, £1.

April 5.—**Rugby.**—Erection of houses at Rugby, for the Commissioners of H.M.O.W. Borough Surveyor, Rugby, and H.M.O.W., Storey's-gate, Westminster, S.W.1. Deposit £1.

April 5.—**Woolwich.**—Alterations.—Alterations to Operating Room, &c., and the erection of two rooms in connection, at the Infirmary, Plumstead, for the Board of Guardians. Messrs. Whincop & Parnell, architects, 42, William-street, Woolwich, S.E.18.

*April 6.—**Bedford.**—Painting.—Painting of the lamp-posts, section pillars, &c., in the borough. Borough Electrical Engineer, Cauldwell-road, Bedford.

April 6.—**Evesham.**—Houses.—Erection of 68 houses with their appurtenances on the Council's site near King's-road, Bengeworth, Evesham, for the Borough of Evesham. Mr. Harold E. Dicks, M.S.A., Architect to the Council, Evesham. Deposit £2 2s.

April 6.—**Stalybridge.**—Extension.—Extension of main car shed, Stalybridge, for the Stalybridge, Hyde, Mossley & Dukinfield Tramways & Electricity Board. Messrs. W. H. George & Son, architects, 7, Warrington-street, Ashton-under-Lyne. Deposit £2 2s.

April 6.—**Wallingford.**—Cottages.—Erection of four brick cottages each at Long Wittenham and Brightwell, Berks, for the R.D.C. Messrs. Drower & Brighton, quantity surveyors, 28, Victoria-street, Westminster, London, S.W.1.

April 7.—**Frimley Green.**—Additions.—Erection of additional buildings at Barrow Hill Sanatorium, Frimley Green, Surrey, for H.M. Office of Works. Director of Contracts, H.M. Office of Works, London, S.W. 1. Deposit £1 1s.

April 7.—**Llandyssul.**—Cottages.—Erection of six cottages, for the R.D.C. Mr. R. Jones, architect, Llandyssul.

April 8.—**Carmarthen.**—Houses.—Erection of the following houses:—Gorslas, Llanarthney (14), Cefneithyn, Llanarthney (14), Drefach, Llanarthney (12), Ferryside (2), Pontyeates (St. Mary's), Llangendeirne (16), Pontyeates (Llwynrhebog), Llangendeirne (10), Carway Village, Llangendeirne (20), Bryn Sefon, Llanddarog (8), Station-road, Saint Clears (8), for the R.D.C. Mr. David Thomas, architect, Quay-street, Ammanford. Deposit, £2 2s.

*April 8.—**Huddersfield.**—Alterations.—Alterations at Huddersfield Post Office for the Commissioners of H.M. Works. Director of Contracts, H.M. Office of Works, London, S.W.1. Deposit £1 1s.

April 8.—**Lochore.**—Houses.—Erection of 28 houses at Lochore site, for the Fife C.C. Messrs. William Williamson, and Geo. B. Deas, architects, Royal Bank Buildings, Kirkcaldy. Deposit, £1 1s.

April 9.—**Ashbourne.**—Houses.—Erection of 40 houses, for the R.D.C. Mr. J. H. Wheeldon, Housing Surveyor, King Edward-street, Ashbourne. Deposit £1 1s.

April 9.—**Edinburgh.**—Jobbing Work.—For building works (various) involved in maintenance of Corporation properties. City Architect, City Chambers, Edinburgh.

April 9.—**Glasgow.**—Jobbing Work.—Execution for one year of brick work, painting, joiners' work, plasterers', and slaters' work, for the T.C. Office of Public Works, City Chambers, Cochrane-street, Glasgow.

April 9.—**Sandwich.**—Houses.—Erection of 50 houses, for the T.C. Mr. E. W. May, architect, 51, New-street, Sandwich. Deposit £3 3s.

April 9.—**Swindon.**—Houses.—Erection of 100 houses, for the T.C. Borough Surveyor, Council Offices, Swindon. Deposit £1 1s.

*April 9.—**Waltham Cross.**—Houses.—Erection of 118 houses on Paul's Nursery site, for Cheshunt U.D.C. Mr. J. E. Sharpe, Engineer and Surveyor to the Council, Manor House, Cheshunt. Deposit, £2 2s.

April 10.—**Edinburgh.**—Houses.—Erection of tenement houses at Willowbrae-road (Abercorn area), for the T.C. Mr. J. D. Gibson, surveyor, 60, Frederick-street, Edinburgh.

April 11.—**Buxton.**—Houses.—Various works required in the execution and completion of brick houses, King's-road, Fairfield, Buxton, in blocks of two, three and four houses, for the Borough Council, in connection with their proposed housing scheme. Mr. F. Langley, Borough Engineer and Surveyor, Town Hall, Buxton.

*April 11.—**Newcastle-on-Tyne.**—Houses.—Erection of about 540 houses and for the making of the estate roads and the laying of drains, for the T.C. Mr. James T. Cackett, architect, Pilgrim House, Newcastle-on-Tyne.

April 12.—**France and Belgium.**—Headstones.—Supply of 9,000 headstones for the British Military Cemeteries in France and Belgium. The Secretary, Works Branch, Imperial War Graves Commission, 62, Baker-street, London, W.1.

April 12.—**Kirkcudbright.**—Houses.—Erection of 8 houses at Haugh of Urr, and New Abbey, for the C.C. Mr. W. F. Crombie, architect, Benmore, Castle-Douglas. Deposit, £1 1s.

April 13.—**Bandeath.**—Houses.—Erection of houses at Bandeath, for H.M. Office of Works. Architect, H.M. Office of Works, 3, Parliament-square, Edinburgh. Deposit, £1 1s.

April 13.—**Middleton.**—Houses.—Erection of 52 houses, for the T.C. Borough Engineer, Town Hall, Middleton.

April 14.—**Deal.**—Houses.—Erection of 18 houses and one new road under the State-aided housing scheme on the London-road site for the Borough Council. Mr. T. C. Golder, Architect and Borough Surveyor, Municipal Offices, 18, Queen-street, Deal.

April 14.—**St. Albans.**—Telephone Exchange.—Erection of a telephone exchange for the Commissioners of H.M. Works. The Secretary, Contracts Branch, H.M. Office of Works, London, S.W.1. Deposit £1 1s.

April 14.—**Southwell.**—Houses.—Erection of 100 houses of various types in the parish of Rufford, for the R.D.C. Messrs. Sands & Walker, Milton Chambers, Nottingham. Deposit, £2 2s.

April 15.—**Hessle.**—Houses, &c.—Construction of street and sewerage works in connection with the laying out, for housing purposes, of about 7 acres of land: (*b*) erection of 80 houses on the said land; (*c*) erection of two houses at the corner of Barrow-lane and Swanland-road, Hessle, for the U.D.C. Mr. J. M. Dossor, F.R.I.B.A., Waterloo Chambers, Hull. Deposit £2.

*April 15.—**Southampton.**—Alterations.—For alterations at the Telephone Exchange, Southampton, for the Commissioners of H.M. Works. Director of Contracts, H.M. Office of Works, London, S.W.1.

*April 15.—**Wrexham.**—Repairs and Material.—Triennial Contract, from May 1, 1921, at Wrexham, in the Oswestry Division of the Welsh Area, Royal Engineer District, 3, Belmont, Shrewsbury. Engineer, Royal Engineers Office, 3, Belmont, Shrewsbury.

*April 16.—**Ashby Woulds.**—Houses.—Erection of 8 houses at Albert Village, for the U.D.C. Messrs Baines & Provis, architects, 22, Friar-lane, Leicester.

April 16.—**Sheffield.**—Refuse Disposal Works.—Erection and supply of buildings and plant for new refuse disposal works, for the T.C. Messrs. Mortimore, Lyon & Co., engineers, 48, Mansfield Chambers, St. Ann's-square, Manchester. Deposit £5 5s.

*April 16.—**Stamford.**—Houses.—Erection of 66 houses upon the land south of New Cross-road, for the T.C. Mr. F. R. Ryman, Borough Engineer, Town Hall, Stamford. Deposit £2.

*April 16.—**Thornbury and Scholemoor.**—Houses.—Erection of following houses for the Corporation of the City of Bradford: Thornbury, 70; Scholemoor 102. The City Architect, Town Hall, Bradford.

*April 18.—**Bromley District.**—Houses, &c.—Road making and construction of sewers in connection with four sites, and the erection of the following houses, in pairs, with footpaths, fencing, &c.: Chelsfield, 50; Farnborough, 16; Hayes, 10; Keston, 32; Knockholt, 12; Orpington, 130; St. Mary Cray, 50; West Wickham, 12, for Bromley R.D.C. Mr. F. Danby Smith, F.R.I.B.A., Parliament Mansions, Victoria-street, S.W.1.

*April 18.—**Chipping Wycombe.**—Houses.—Erection of 28 houses in Terriers housing scheme, for the B.C. Mr. T. J. Rushbrooke, Borough Surveyor, 25, Easton-street, High Wycombe. Deposit £1.

*April 19.—**Loughborough.**—Houses.—Erection of 34 houses on Land Corporation and Oliver-roads for the Borough of Loughborough. Messrs. Albert E. King & Co., architects and surveyors, 19, Baxter-gate, Loughborough. Deposit £1 1s.

*April 21.—**Ashby-de-la-Zouch.**—Houses.—Erection and completion of 100 houses for the R.D.C., on various sites. Mr. Harry Swanwick, architect and surveyor, 10A, High-street, Coalville.

*April 23.—**London, W.**—Painting and Cleansing.—Painting, cleansing, &c., of Guardians' Offices, Northumberland-street, W., and the Dispensary, 82 and 82A, East-street, W. For the Guardians of the Parish of St. Marylebone. Mr. H. Courtenay Constantine, 82, Mortimer-street, W.

*April 27.—**Westminster, S.W.1.**—Painting and General Repairs.—Painting, distempering, general repairs and the erection of a sanitary annexe to the Infirmary in the Fulham-road, for the Guardians of the Westminster Union. Clerk to the Guardians, Guardians' Offices, Princes-row, Buckingham Palace-road, S.W.1.

*April 27.—**Westminster, S.W.**—Wood Block Flooring.—Supplying and fixing wood block flooring for the Guardians of the Westminster Union Infirmary. Clerk to the Guardians, Guardians' Offices, Princes-row, Buckingham Palace-road, S.W.1.

April 27.—**Woolwich.**—Alterations.—Alterations to operating room, &c., and the erection of two rooms in connection, at the Infirmary, Plumstead, for the Guardians of the Woolwich Union. Messrs. Whincop & Parnell, 42, William-street, Woolwich, S.E.18.

*April 28.—**Isle of Thanet.**—Houses.—Erection of houses at Westgate-on-Sea; alternative tenders for 8 or 16; Birchington, 8 houses; Minster, 10 houses; and Acol, 4 houses, for the R.D.C. Mr. F. J. Cornford, M.S.A., Town Hall Buildings, Westgate-on-Sea. Deposit £2 2s.

April 29.—**London.**—Swing Frames.—Supply and erection of reinforced concrete swing frames and giant stride poles in the parks of the L.C.C. Chief Officer, Parks Department, 19, Charing Cross-road, W.C.2.

*May 5.—**Ramsgate.**—Houses.—Erection and completion of 26 houses on the Dumpton-road site, for the Corporation. Mr. A. Blasdale Clarke, Town Clerk, Albion House, Ramsgate. Deposit £2 2s.

June 30.—**Pulborough.**—Cottages.—Erection of 30 cottages in various parishes, for the R.D.C. Mr. Percy Ayling, Clerk to the Council, Council Offices, Storrington, Pulborough.

No Date.—**London.**—Various Works.—Applications invited by L.C.C. for inclusion on the Council's approved lists of persons and firms to be invited to tender for various works in connection with the Council's educational institutions: (1) New buildings, &c.; (2) structural alterations; (3) cleaning and painting, including minor repairs; (4) drainage and sanitary work; (5) temporary iron buildings (erection and removal and re-erection); (6) iron staircases; (7) heating. Architect to the Council, New County Hall, S.E.1.

No Date.—**Merthyr Tydvil.**—Houses.—Erection of houses, for the T.C. Borough Architect, Town Hall, Merthur Tydvil.

No Date.—**North Riding of Yorkshire.**—Various Works.—Erection of three bungalow cottages, and two sets of farm buildings; also alterations and additions to the existing farm buildings at Bromakin Grange, Bedale. Mr. A. J. Lyddon, County Surveyor, County Hall, Northallerton.

No Date.—**Thirsk.**—Houses.—Erection of three houses at Ainderby Quernhow; two at Birdforth; one at Sessay (Site No. 1); seven at Sessay (Site No. 2); six at Dalton; and six at Langthorpe, for the R.D.C. Mr. William Swarbreck, Clerk, Council Office, Finkle-street, Thirsk.

FURNITURE, MATERIALS, etc.

April 4.—**Belfast.**—Stores.—Supply of materials, to the Electricity Dept. of the T.C. Mr. T. W. Bloxham, City Electrical Engineer, Belfast. Deposit, 10s.

April 4.—**Hertford.**—Materials.—Supply of materials to the T.C. Borough Surveyor, The Castle, Hertford.

April 4.—**Ramsey.**—Road Materials.—Supply of road materials to the U.D.C. Mr. Richard F. Serjeant, Clerk, Ramsey, Huntingdonshire.

April 4.—**Yiewsley.**—Joinery.—For supply of joinery for housing scheme. The Director of Contracts, H.M. Office of Works, London, S.W. 1.

April 5.—**Barton - on - Humber.** — Materials. — Supply of road materials to the U.D.C. Mr. J. C. Stevenson, Surveyor, Council Offices, Barton-on-Humber.

April 5.—**Hammersmith.**—Tar.—Supply of about 30,000 gallons of refined tar for the surfacing of roads. Mr. R. Hampton Clucas, Borough Engineer, Town Hall, Hammersmith, W. 6.

April 5.—**Sefton.**—Materials.—Supply of road materials, to the R.D.C. Mr. F. Pool, surveyor, 21, Everod-avenue, Walton, Liverpool.

APRIL 6.—**London.**—LOCKS.—For the supply of locks to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

APRIL 6.—**London.**—OILS.—Supply of various oils, &c., to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

APRIL 7.—**Maldon.**—SLAG, &C.—Supply of tarred slag, also for steam or other rolling, to the T.C. Mr. Thos. R. Swales, Borough Engineer, Municipal Offices, Maldon.

APRIL 8.—**Beddington.**—SLAG.—Supply of (*a*) Slag, 2 in. gauge, 600 tons; (*b*) slag, ¾ to 1 in. gauge, 250 tons, to the U.D.C. Surveyor, Council Offices, Wallington, Surrey.

APRIL 9.—**Blything.**—ROAD MATERIALS.—Supply of road materials to the R.D.C. Mr. H. R. Buddery, Clerk, Council Offices, Bulcamp, Halesworth.

APRIL 9.—**Earsdon.**—ROAD MATERIALS.—Supply of road materials to the U.D.C. Mr. J. R. McMillen, Surveyor, Council Offices, Shiremoor.

APRIL 9.—**Edinburgh.**—STORES.—Supply of general stores, for the Gas Department. Mr. Alexander Masterton, Manager, 15, Calton Hill, Edinburgh.

APRIL 9.—**Glasgow.**—MATERIALS.—Supply of various materials, for the Statute Labour Dept., Office of Public Works, Cochrane-street, Glasgow.

APRIL 11.—**Runcorn.**—ROAD MATERIALS.—Supply of granite macadam, setts, kerbstones and sanitary pipes, to the R.D.C. Mr. Geo. F. Ashton, Clerk, Council Offices, Runcorn.

APRIL 11.—**Tenterden.**—MATERIALS.—Supply of road materials to the R.D.C. Mr. W. L. Turner, District Surveyor, Tenterden.

APRIL 12.—**London.**—GRANITE SETTS.—Supply of granite setts to the Tramways Dept. General Manager, L.C.C. Tramways, 23, Belvedere-road, Lambeth, S.E.

APRIL 18.—**Tenterden.**—MATERIALS.—Supply of road materials to the T.C. Mr. W. L. Turner, Borough Surveyor, Tenterden.

ENGINEERING, IRON AND STEEL.

APRIL 4.—**Saxmundham.**—BRIDGE.—Reconstructing in ferro-concrete Langham Bridge, in the parishes of Farnham and Blaxhall, 4 miles from Saxmundham. Waterway 38 ft. 6 in. in two equal spans; roadway, 12 ft., for the East Suffolk C.C. Mr. H. Miller, County Bridge Surveyor, Ipswich.

APRIL 6.—**Bickley.**—RESERVOIR.—Construction of covered service reservoir at Bickley, Kent, for the Metropolitan Water Board. Offices of the Board, Chief Engineer's Dept. (Room 201), Rosebery-avenue, Clerkenwell, E.C. Deposit, £10.

APRIL 7.—**Manchester.**—PIPES AND CRANES.—Supply of (*a*) high-pressure steam and water pipes, &c., (*b*) electric and hand operated cranes to the Electricity Dept. Mr. S. L. Pearce, Chief Engineer, Dickinson-street, Manchester. Deposit, £1 1s.

APRIL 9.—**Crayford.**—ROAD PLANT.—Supply of 10-ton motor road roller and a drag scarifier, to the U.D.C. Mr. W. F. Bickford, Surveyor, Council Offices, Crayford.

APRIL 9. — **Southampton.** — STEAM ROLLER. — Supply of 10 ton compound steam roller and scarifier, for the T.C. Borough Engineer, Southampton.

APRIL 12.—**India.**—STEEL WORK.—Supply of steel work for bridges to the Great Indian Peninsular Railway Co. Mr. R. H. Walpole, Secretary, 48, Copthall-avenue, E.C. Fee £1.

APRIL 12.—**Leeds.**—LABOUR.—Supply of electrical engineering labour-in-day-work in the Leeds district, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, Storey's-gate, S.W.

APRIL 12.—**Ross-shire.**—BRIDGES, &C.—Construction of (1) masonry and other work for bridge over Luibmere Burn; (2) steel structure work for ditto; (3) protection work for burn banks; (4) masonry and other work for bridge over Brancheig Burn; (5) structural steel work for same; (6) 435 yards of road, for the C.C. Mr. Manners, engineer, 12, Lowland-street, Inverness.

APRIL 13.—**Durham.**—TUNNELLING.—Construction of two tunnels under the Stanhope and Muggleswick Commons, of a total length of about three miles, together with the shaft boring and other works connected therewith, for the Durham County Water Board. Messrs. T. & C. Hawksley, civil engineers, 62, Broadway, Westminster, S.W. 1. Deposit, £3 3s.

APRIL 13.—**Madras.**—CHLORINATING PLANT.—Supply and delivery of an experimental chlorinating plant capable of producing about 10 lbs. of available chlorine per day and applying it to the Madras City Water Supply. Messrs. James Mansergh & Sons, Agents to the Corporation, 5, Victoria-street, Westminster, S.W.1. Charge, 5s.

APRIL 18.—**London.**—TRAM RAILS.—Supply of 5,500 tons of standard steel girder tramway track rails, &c., for the L.C.C. Chief Engineer, County Hall, Spring Gardens, S.W. Deposit, £2.

APRIL 18.—**Montevideo.**—BRIDGE.—Construction of superstructure of bridge over the Santa Lucia River, for the Ministry of Public Works. Enquiry Office, Department of Overseas Trade, 35, Old Queen-st., S.W.

APRIL 20.—**Bournemouth.**—BRIDGE.—Construction of reinforced concrete bridge, St. Stephen's-road, for the T.C. Mr. F. P. Dolamore, Borough Engineer, Municipal Offices, Bournemouth. Deposit £1 1s.

APRIL 21.—**Hong Kong.**—PUMPING MACHINERY.—For supply and setting to work at Taitam Tuk Works, Hong Kong, of vertical rotary steam pumping engine capable of lifting three million gallons per day a vertical height of 400 feet, two Lancashire boilers, superheaters, fuel economiser, feed pumps, pipe work, valves, and all accessories and auxiliary plant, for the Public Works Dept. Chief Engineer at the Offices of the Crown Agents for the Colonies, 4, Millbank, Westminster. Deposit, £5.

APRIL 28.—**Manchester.**—DOCK WORKS.—Construction of a reinforced concrete quay and the foundations for transit sheds at Trafford Wharf, Manchester Docks, for the Manchester Ship Canal. Chief Engineer (Mr. H. A. Reed, M.Inst.C.E.), 41, Spring-gardens, Manchester. Deposit, £2 2s.

MAY 2.—**South Africa.**—GRAIN ELEVATORS.—Construction of (*a*) one terminal grain elevator at Cape Town, capacity 30,000 tons of 2,000 lbs.; (*b*) one terminal grain elevator at Durban, capacity 42,000 tons of 2,000 lbs.; (*c*) 34 country elevators, ranging in capacity from 1,800 to 5,800 tons of 2,000 lbs. High Commissioner for the Union of South Africa, 32, Victoria-street, London. Deposit £100.

MAY 31.—**Bombay.**—WATER WORKS.—Construction of about 105 miles of steel and reinforced concrete pipe lines (from 72 in. to 57 in. diameter), and contingent works, for the Corporation. Messrs. Taylor & Sons, consulting engineers, 36, Victoria-street, Westminster, London, S.W. Deposit, £2 each specification (8).

JUNE 8.—**Clapton.**—PUMPING MACHINERY.—Supply and erection of pumping machinery at Lea Bridge, Clapton, N.E., for the Metropolitan Water Board. Chief Engineer's Department, 173, Rosebery-avenue, Clerkenwell, E.C.1. Deposit, £3 3s.

JUNE 15.—**Walton-on-Thames.**—PUMPING MACHINERY.—Supply and erection of pumping machinery near Walton-on-Thames, Surrey, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, Offices, Rosebery-avenue, E.C. Deposit, £5.

JUNE 20.—**China.**—BRIDGE.—The Peking-Hankow Line (Chinese Government Railways) invites sealed proposals for designing and building a new steel bridge, about 2,800 metres in length, across the Yellow River (Hoangho). Plans, &c., by telegraph from the following offices: Peking-Hankow Railway, Peking, China; Chinese Legation, London; British Legation, Peking, China. Deposit £6.

ROAD, SANITARY, AND WATER WORKS.

APRIL 4.—**Wortley.** — SEWER. — Construction of sewer at Mortomley, near Sheffield, for the R.D.C. Mr. F. Thurlby, surveyor, Grenoside, near Sheffield. Deposit £2 2s.

APRIL 4.—**Wrexham.**—ROADS.—Re-surfacing with tarred macadam of a portion of Chester-road, for the T.C. Borough Engineer's Office, Willow-road, Wrexham.

APRIL 5.—**Gosforth.**—ROADS AND SEWERS.—For laying sewers and forming roads, &c., on the housing site at Coxlodge, for the U.D.C. Mr. Geo. Nelson, Surveyor, Council Chambers, Gosforth.

APRIL 7.—**Hexham.**—WATER SUPPLY.—Laying water pipes, &c., for additional water supply from the Park allotment to Bridge End, Allendale, for the R.D.C. Mr. J. H. Nicholson, Clerk, Barclay's Bank Chambers, Hexham.

APRIL 7.—**Maldon.**—TARRING.—For surface tarring approximately 50,000 square yards of roads with refined tar, for the T.C. Mr. Thos. R. Swales, Borough Engineer, Municipal Offices, Maldon.

APRIL 7.—**Southampton.**—WATER MAIN.—Laying of a 16-in. cast-iron water main, for the T.C. Waterworks Engineer's Office, 33 and 35, French-street, Southampton. Deposit £1 1s.

APRIL 8.—**Lochore.**—ROADS, &C.—Formation of roads and sewerage works at Glencraig site, Lochore, for the Fife C.C. Messrs. William Williamson, and Geo. B. Deas, architects, Royal Bank Buildings, Kirkcaldy. Deposit, £1 1s.

APRIL 9.—**Blything.**—ROLLING.—For steam rolling the district roads of the R.D.C. Mr. H. R. Buddery, Clerk, Council Offices, Bulcamp, Halesworth.

APRIL 9.— **Earsdon.** — SEWERAGE WORKS. — Construction of 1,198 lineal yards of earthenware pipe sewer, &c., at Holywell, for the U.D.C. Mr. J. R. McMillen, Surveyor, Council Offices, Shiremoor.

APRIL 9.—**Edinburgh.**—ROADS.—For pavement repairs, &c., for the T.C. City Road Surveyor, City Chambers, Edinburgh.

APRIL 9.—**Failsworth.**—ROADS, &C.—Street making and sewerage works required in connection with the No. 1 Section of the housing scheme, of the U.D.C. Mr. George H. Fletcher, architect, 349, Oldham-road, Failsworth. Deposit, £2 2s.

APRIL 9.—**Glasgow.**—JOBBING WORK.—For carrying out following jobbing work for one year, for the T.C.: Asphalte fronting, asphalte paving, paving and drainage, pavior, plumber and gasfitting work. Office of Public Works, Cochrane-street, Glasgow.

✱APRIL 9.—**Waltham Cross.**—SEWERS.—Construction of sewers for Cheshunt U.D.C., 365 yards of 9 in. and 12 in. sewer, together with the necessary manholes, &c. Mr. J. E. Sharpe, Engineer and Surveyor to the Council, Manor House, Cheshunt. Deposit £2 2s.

APRIL 11.—**Hendon.**—RECONSTRUCTION OF ROAD.—Reconstruction of parts of Edgware-road for the U.D.C. Work comprising the following or thereabouts:—4,440 yds. lin. of new 6 in. by 12 in. Norway granite kerb; 22,000 yds. super of 3 in. by 4 in. creosoted deal blocks paving on reinforced concrete foundation; 2,400 yds. supl. 2 in. artificial stone paving; 5,000 yds. supl. 3 in. limestone tar paving; 1,428 yds. lin. 6 in. stoneware pipe drain; 820 yds. lin. 4 in. stoneware pipe drain; with all other works connected therewith. Mr. A. O. Knight, A.M.I.C.E., Engineer and Surveyor to the Council, Town Hall, Hendon, N.W.4. Deposit, £10 10s

APRIL 11.—**Lenham.**—SEWAGE DISPOSAL WORKS.—Construction of sewage disposa works at Lenham Sanatorium, situated about 2½ miles from Lenham Station, for the Kent C.C. Messrs. Shenton & Easdale, of 28, Victoria-street, London, S.W. Deposit £2.

APRIL 18.—**Hatfield.**—SEWERAGE WORKS.—Construction of sewage disposal works at Welham Green, for the R.D.C. Surveyor, Council Offices, Hatfield. Deposit £5.

Auction Sales, Tenders, etc.

✱APRIL 4.—**Falmouth.**—MARKET SITE.—For sale by tender: Freehold site adjoining municipal buildings and free library, area 1,150 square yards. Mr. W. H. Lupton, Town Clerk, Borough of Falmouth.

✱APRIL 5.—**Lambeth, London, S.E.**—Messrs. Veryard & Yates will sell, at 10A, Hartington-road, South Lambeth, building plant and materials. Also at the "Swan Hotel," Stockwell, April 6, about 150 standard best quality nearly new imported timber and building materials. Auctioneers, 365, Norwood-road, S.E. 27.

APRIL 5.—**Liverpool.**—Messrs. Joseph Hibbard & Sons will sell by auction, at the Yard, 40, Primrose-road, Bootle, dry stock of English and imported timber, including 6,500 ft. 8/E and other Dutch elm, 80,000 ft. 8/E and other plain oak, &c.; also saw mill machinery. Auctioneers, Newington Green, Islington, London, N.16.

✱APRIL 7.—**Liverpool.**—Messrs. Alfred Dobell & Co. will sell in their sale room, Sandhills, Liverpool, timber of various kinds. Auctioneers, Messrs. Alfred Dobell & Co., timber and mahogany brokers, Liverpool.

✱APRIL 7.—**Neasden.**—Messrs. Davis & Moon will sell by order of the liquidators at Blackbird Farm, Neasden, builders' and contractors' plant and machinery. Auctioneers, 285, Borough High-street, S.E.1

✱APRIL 12.—**London, E.C.2.**—Messrs. Debenham, Tewson & Chinnocks will sell the Freehold factory premises of the Standard Building Construction Co., Ltd. (in Voluntary Liquidation), Slough, together with land, seven cottages, plant, machinery and stock. Auctioneers, 80, Cheapside, E.C. 2.

✱APRIL 12.—**Stratton Strawless.**—Messrs. Joseph Hibbard & Sons will sell by public auction by order of the Board of Trade at depots adjoining the main Norwich to Cromer road, stock of well-cut English timber including 20,000 feet cube English oak, quantity of beech planking, &c. Auctioneers, Newington-green, Islington, London, N.16.

✱APRIL 20.—**Wandsworth Common.**—Messrs. Green & Son will sell by auction, by direction of the Disposal Board, corrugated iron buildings and huts, at 3rd London General Hospital. Auctioneers, 72, King-street, Hammersmith, W. 6.

Competitions.

(*See Competition News, page* 398.)

Public Appointments.

✱APRIL 6.—**London, E.C.**—Architect and Surveyor required by the Worshipful Company of Cutlers, Cutlers' Hall, Warwick-lane. Applications to be endorsed "Architect and Surveyor," and forwarded to the Company.

APRIL 6.—**Newcastle-on-Tyne.**—Quantity Surveying Assistant required by Housing Committee of the Corporation in connection with their housing scheme. The Housing Architect, 18, Cloth-street, Newcastle upon-Tyne.

✱APRIL 7.—**Bilston.**—Clerk of Works required for Housing Department by U.D.C. Mr. Edgar Willan, M.Inst.M. & Cty.E., Surveyor and Housing Director, Town Hall, Bilston.

✱APRIL 8.—**Orsett, Essex.**—Architectural and surveying assistant for housing scheme required by the R.D.C. Mr. James Beck, Clerk to the Council, 2, Orsett-road, Grays, Essex.

✱APRIL 10.—**Clapham, S.W.**—Visiting Teacher of Plumbing (qualified to undertake lecturing, drawing and practical workshop instruction, and holding the City and Guilds of London Honours Certificate in theoretical and practical plumbing) at the School of Building, Ferndale-road, Clapham, S.W. 4. Education Officer (T.I.A) Education Offices, Victoria Embankment, W.C. 2.

✱APRIL 11.—**Cardiff.**—Clerk of Works required at the City of Cardiff Mental Hospital, Whitechurch-road, near Cardiff, by the City of Cardiff Corporation. Mr. Cecil G. Brown, Town Clerk, City Hall, Cardiff.

✱APRIL 15.—**Winchester.**—A junior draughtsman required by County of Southampton Architect's Dept. Mr. A. L. Roberts, County Architect, The Castle, Winchester.

APRIL. — **London, N.** — **Required in April an Assistant Master (part time)** for practical plumbing and sanitation, with possible full time. Mr. H. P. Shallard, The Polytechnic, N. 15.

✱NO DATE.—**Shanghai.**—Clerk of Works required for Works Department of the Chinese Customs Service. The Secretary, Chinese Customs Office, 26, Old Queen-street, Westminster, S.W.1.

Change of Address.

On and after Monday, April 4, the Head Office, Sales Department, and Stores of the General Electric Co., Ltd., will be at Magnet House, Kingsway, London, W.C. The new telephone number is Regent 7050. Until further notice, the showrooms of the company will remain at 67, Queen Victoria-street, E.C.4.

A New Form of Building Guild.

The *Morning Post* states that the St. Luke's War Memorial Hostel at Stepney has started an ex-Service Men's Trade Guild and formed a Building and Decorating Branch, which is under the supervision and guidance of an architect and an experienced foreman builder. It is stated that the work it has done for the London County Council in the parish elementary schools has given every satisfaction, and that the vicar, the Rev. B. N. Switzer, who is the director, has been paying the members of the Guild at the rate of £100 per week since Christmas

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue, Lead and Paint prices have been revised.—Ed.]

BRICKS, &c.

	Per 1,000 Alongside, in River Thames up to London Bridge.	£ s. d.
Best Stocks		5 1 6
Per 1000, Delivered at London Goods Stations.	£ s. d.	
Flettons	3 17 0	
Best Stourbridge Fire bricks	12 14 0	
GLAZED BRICKS—		
Best White, Ivory, and Salt Glazed Stretchers	29 10 0	
Headers	29 0 0	
Quoins, Bullnose and 4½in. Flats	36 0 0	
Second Quality £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.		

Best Stock Bricks delivered in Paddington: Best Portland Cement £4 7s. 6d. per ton; Ferrocrete per ton extra on above 10s. 0d.; Best Ground Blue Lias Lime 3 12 6 at rly. depot.

Best Blue Pressed Staffordshire	12 4 0	
Do. Bullnose	12 14 0	
Blue Wire Cuts	10 6 6	
D'ble Str'tch'rs	38 0 0	
D'ble Headers	35 0 0	
One Side and two Ends	39 0 0	
Two Sides and one End	40 0 0	
Splays and Squints	37 10 0	

	s. d.	
Thames Ballast	18 6	per yard, delivered 2 miles radius Paddington.
Pit Sand	24 0	
Thames Sand	25 0	
Best Washed Sand	25 0	
¾in. Shingle for Ferro-Concrete	24 6	
½in. " "	25 6	

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 75s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 44s. 8d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 5½
Do. do. delivered on road wagons at Nine Elms Depot	3 6½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 11½
Do. do. delivered on road wagons at above stations, per ft. cube	5 0½
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	16 0
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	10 0
6 in. rubbed two sides, ditto ..... "	11 2
3 in. sawn two sides slabs (random sizes) "	4 4
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	2 8
1½ in. to 2 in. ditto, ditto ..... "	2 3
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	10 3
6 in. sawn two sides landing to sizes (under 40 ft. super.) ..... Per Ft. Super	9 6
6 in. rubbed two sides ditto ..... "	11 6
4 in. sawn two sides slabs (random sizes) "	5 6
3 in. ditto, ditto "	4 6
2 in. self-faced random flags .. Per Yard Super	13 6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	64 0	per standard
4 × 9	60 0	"
4 × 8	48 0	"
4 × 7	46 0	"
3 × 8	48 10	"
3 × 7	46 0	"
2½ × 7	45 0	"
3 × 6	43 0	"
3 × 11	65 0	"
2 × 11	65 0	"
3 × 9	55 0	"
2½ × 9	55 0	"
3 × 4½	44 0	"
3 × 4	44 0	"

PLANED BOARDS.

1 × 11	70 0	"
1 × 9	60 0	"

PLAIN EDGE FLOORING.

Inches		
¾	37/6	per square
1	40/-	"
1	48/-	"
1¼	60/-	"
1½	72/-	"

TONGUED AND GROOVED FLOORING.

Inches		
1	48/-	per square
1¼	60/-	"
1½	72/-	"

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	35/-	per square
1	39/-	"
1	50/-	"

BATTENS.

Inches	s. d.	
¾ × 2	4 9	per 100 ft.

SAWN LATHS.

Per bundle					0 5	9
Dry Wainscot Oak, per ft. super, as inch	0	3	6	to	0 4	0
¼in. do. do.	0	2	0	..	—	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6	to	0 3	0
Cuba Mahogany	0	4	0	to	0 4	6
Teak (Rangoon, Moulmein or Java), per load	75	0	0	to	85 0	0
American Whitewood planks, per ft. cube	0	18	0	to	1 4	0
Best Scotch Glue, per cwt.	10	0	0	..	—	
Liquid Glue, per cwt.	5	8	0	..	6 15	0

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	56 10 0
" "	22 by 12	46 0 0
First quality " "	22 by 11	42 10 0
" "	20 by 12	42 0 0
Best Blue Portmadoc	20 by 10	36 10 0
" "	18 by 10	29 10 0
First quality "	18 by 9	24 5 0
" "	16 by 10	22 15 0
" "	16 by 8	18 0 0

TILES.

	Per 1,000 f.o.r. London £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	7 15 0
Ditto hand-made ditto	8 10 0
Ornamental ditto	7 7 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	28 0 0
Plain Compound Girders	30 0 0
" Stanchions	32 0 0
In Roof Work	36 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Tubes. ½" to 2". 2½" to 6".		Fittings. ½" to 2". 2½" to 6".
Gas	—10	—15 ..	—17½ —25
Water	Net	— 6½ ..	—12½ —22½
Steam	+11½	+ 3½ ..	— 7½ —20
Galv'd Gas	+10	+ 5 ..	—10 —17½
" Water	+22½	+16½ ..	— 5 —15
" Steam	+35	+27½ ..	Net —12½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.		Bends, stock angles. s. d.		Branches, stock angles. s. d.
2 in. per yd. in 6 fts.	6 4	..	4 6	..	5 5
2½ in. "	7 3½	..	4 11½	..	6 9
3 in. "	9 0½	..	5 5	..	8 1
3½ in. "	10 0	..	6 9	..	9 5½
4 in. "	10 11½	..	7 8	..	10 9½

RAIN-WATER PIPES, &c.

	Pipe. s. d.		Bends, stock angles. s. d.		Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 6	..	3 2	..	4 0
2½ in. " "	6 0	..	3 6	..	4 10
3 in. " "	7 3	..	4 4	..	6 6
3½ in. " "	8 9	..	5 2	..	7 6
4 in. " "	9 9	..	6 3	..	9 3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. per yd.: 4 in., 13/-. .. 5 in., 16/6. .. 6 in., 19/11.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	27 10 0	to	28 10 0
Staffordshire Crown Bars — good merchant quality	28 0 0	..	29 0 0
Staffordshire "Marked Bars"	30 10 0	..	32 10 0
Mild Steel Bars	24 0 0	..	26 0 0
Steel Bars. Ferro-Concrete quality, basis price	24 0 0	..	26 0 0
Hoop Iron, basis price	31 0 0	..	33 0 0
" Galvanised	46 0 0	..	48 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	30 0 0	..	32 0 0
" " " 24 g.	31 0 0	..	33 0 0
" " " 26 g.	33 0 0	..	34 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	38 0 0	..	39 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	39 0 0	..	41 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	41 0 0	..	43 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	29 0 0	..	30 0 0

METALS (*Continued*).

	Per ton in London £ s. d.		£ s. d.
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	30 0 0	..	31 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	32 0 0	..	34 0 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	38 0 0	..	39 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	39 0 0	..	40 0 0
Best Soft Steel Sheets, 26 g.	40 0 0	..	41 0 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	33 0 0	..	34 0 0

LEAD, &c.

Delivered in London.	£ s. d.		
LEAD Sheet, English, 4 lb. and up	33 10 0	..	—
Pipe in coils	34 0 0	..	—
Soil Pipe	36 10 0	..	—
Compo pipe	37 10 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	16 0 0	..	—
Do., ex country, carriage forward ..... per ton	17 0 0	—	—
COPPER— Strong Sheet ....per lb.	0 2 3	..	—
Thin " .... "	0 2 4	..	—
Copper nails .... "	0 2 3	..	—
Copper wire .... "	0 2 4	—	—
TIN—English Ingots "	0 2 0	..	—
SOLDER—Plumbers' "	0 1 0	..	—
Tinmen's "	0 1 3	..	—
Blowpipe "	0 1 5	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES

Per Ft.		Per Ft.
15 oz. fourths .... 4½d.	32 oz. fourths	10½d.
" thirds ..... 5d.	" thirds	1/-
21 " fourths .... 6½d.	Fluted, Obscured and Enamelled Sheet.	
" thirds ..... 7½d.	15 oz.	7d.
26 " fourths .. 8d.	21 "	9d.
" thirds ..... 9½d.		

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	5½d.
¼ Rough rolled	6½d.
½ Rough rolled	7½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	6½d.
White Rolled Cathedral	6½d.
Tinted do.	7½d.

Cast Plate is ½d. extra on the price of rough rolled.

PAINTS, &c.

		£ s. d
Raw Linseed Oil	in pipes ..... per gallon	0 3 1
" " "	in barrels .... "	0 3 2
" " "	in drums .... "	0 3 3
Boiled " "	in barrels .... "	0 3 7
" " "	in drums .... "	0 3 9
Turpentine	in barrels ..... "	0 4 10
"	in drums (10 gall.) .. "	0 5 1
Genuine Ground English White Lead, (In not less than 5 cwt. casks.)	per ton	58 10 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	84 0 0
Red Lead, Dry (packages extra) ..	per ton	63 0 0
Best Linseed Oil Putty	per cwt.	0 19
Filocol	per cwt.	0 18 0
Size. X D Quality	fkn.	0 5 9

VARNISHES, &c.

	Per gallon £ s. d.	
Oak Varnish	Outside	0 15 0
Fine ditto	ditto	0 17 2
Fine Copal	ditto	1 1 6
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 6
Best ditto	ditto	1 14 6
Floor Varnish	Inside	0 19 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size		0 12 6
Best Black Japan		0 16 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 9
Berlin Black		0 16 6
Knotting (patent)		1 16 0
French and Brush Polish		1 8 0
Liquid Dryers in Terebine		0 13 6
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	22	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	55	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2: 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	50	15	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat strucks or weathered joint	" "	0	0	3½

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	1	0
Axed in stocks	" "	0	2	0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	8
Setting ordinary register grates and stoves	each	1	5	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	6	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

York stone templates fixed	per foot cube	22	0
York stone sills fixed	" "	35	0
Bath stone and all labour fixed	" "	16	9
Portland stone fixed	" "	26	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	98	0
Do. 20 in. × 10 in. Do. Do.	"	115	0
Do. 24 in. × 12 in. Do. Do.	"	117	6

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	9	0	
Do. joists	" "	10	0	
Do. roofs, floors and partitions	" "	11	3	
Do. trusses	" "	13	6	

		½"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/-	81/-	100/-	108/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	68	0
Do. to beams	per ft. sup.	1	10
Centres for arches	"	2	4
Gutter boards and beams	"	1	9

FLOORING.		½"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/-	104/-	120/-
Do. tongued and grooved	"		88/-	110/-	127/-
Do. matchings	"	74/-	89/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size	" "	5	6

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/8	2/11	3/1
Four-panel Do.	"	3/-	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do.	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/-	2/2	2/3
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets		3/4	4/-	4/8	—	—
Deal strings wrot in both sides and framed	"	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail ; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/-	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good	20/-
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	32	0
Plain compound girders	"	36	0
Do. stanchions	"	39	0
In roof work	"	43	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	2/-	2/6	3/9	4/3
Ogee Do. Do.	"	2/6	3/3	4/-	5/-
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/-	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/-	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	59	0
Do. Do. in flats	"	54	0
Extra labour and solder in coated cesspools	each	7	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	1
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/-	1/8	1/11	3/5	4/3	
Do. service	"	1/7	2/1	2/6	4/-		
Do. soil	"						6/10
Bends in lead pipe	each					3/7	9/-
Soldered stop ends	"	1/4	1/10	2/3	3/2	3/10	
Red lead joints	"	1/-	1/2	1/5	2/1	2/8	5/5
Wiped soldered joints	"	3/2	3/10	4/6	5/5	7/2	10/10
Lead traps and cleaning screws	"				16/2	21/7	
Bib cocks and joints	"	7/6	11/3	18/-	48/-		
Stop cocks and joints	"	18/-	20/-	30/-	75/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	4
Do. Do. Sirapite	" "	3	9
Do. Do. Keen's	" "	5	0
Add sawn lathing	" "	2	0
Add metal lathing	" "	3	6
Portland cement screed	" "	2	11
Do. plain face	" "	4	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	11

GLAZIER.

21 oz. sheet plain	per foot sup.	1	6
26 oz. Do.	" "	1	9
Obscured sheet	" "	1	11
¼ in. rolled plate	" "	1	1½
¼ in. rough rolled or cast plate	" "	1	2½
¼ in. wired cast plate	" "	1	9

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/- to 5/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 11 should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C for Parish Council.

AMERSHAM.—Plans passed by R.D.C.: Addition to Station Hotel, Amersham; bungalow, Orchard-grove, for Mr. J. Ellaston; additions, 7, London Terrace, High-road, for Mr. G. C. Carver.

BIRKENHEAD.—Plan passed: Additions to Co-operative Society's premises in Catherine-street.

BLAKENEY.—The Holt justices have granted a licence for a hotel to be erected on the quay, from the plans of Mr. H. Sirr.

BRANDON.—Plan passed: Bakery at Meadowfield, for the Mid-Durham Co-operative Bakeries, Ltd.

BUCKIE.—Plans passed: House, South West-street, for Mr. J. Dawson; garage, Low-street, for Mr. W. Gary.

CHERITON.—Plans passed: Two houses, Dunnett-road, for Mr. W. Davis.

CITY OF LONDON.—Plan passed: Warehouse, abutting on Stoney-lane, for the Met. Railway Co.

COALVILLE.—The U.D.C. has signed contracts for the erection of 32 houses at Whitwick, 30 at Coalville and 28 at Ellistown.

DEVIZES.—Plan passed: Bungalow, Potterne-road, for Mr. R. D. Owen.

EAST AUDSLEY.—Plan passed by U.D.C.: Premises, Thorpe-road, East Audsley, for the Morley Industrial Co-operative Society.

EAST HAM.—Plans passed by B.C.: Bay window, &c., 17, Forest-drive, for Mr. G. Jones; club-room, St. Barnabas Church, Browning-road, for Mr. W. Bucknall; stable, 89-91, Katherine-road, for Mr. W. Harris; store, 95-97, High-street North, for Messrs. Stewart & Snow.

HESTON AND ISLEWORTH.—Plans passed: Mr. A. C. Morgan, bungalow, at St. Stephen's-road, Hounslow; Mr. Cyril Sykes, garage at Church-road, Osterley.

HINCKLEY.—Plans passed by R.D.C.: Cottage at Burbage, for Mr. F. Woodward; shop, &c., at Sapcote, for Mr. H. Burman.

JERSEY.—Sir Jesse Boot has made a gift of £50,000 to the island of Jersey, Lady Boot's birthplace, for the specific purpose of erecting workmen's houses. The money is vested in trustees.

LONDON (BE MONDSEY).—The L.C.C. has consented to the erection of buildings on a site in Druid-street on the application of Mr. E. W. Fisher for Messrs. P. Leiner & Sons.

LONDON (DEPTFORD).—Plans passed by B.C.: Billiard hall, rear of 12 and 14, High-street, for Mr. H. J. Axten; lavatory accommodation at Messrs. Eno's factory, Pomeroy-street, for Mr. C. G. Smith.—Drainage plans passed: At 15, 17 and 19, Gosterwood-street, for Messrs. W. Rickers & Sons; at 21, 23 and 25, Gosterwood-street, for Mr. J. Morton; at 37, Gosterwood-street, for Mr J. J. Lester; at 69, Cornbury-road, for Mr. C. J. Nugent; at 33 to 51, Childeric-road, for the Met. House Co.

LONDON (HACKNEY).—The repainting of the municipal baths, &c., is to be carried out by direct labour at an estimated cost of £760. Plans passed by B.C.: Sanitary improvements at Salvation Army premises, 183, Lower Clapton-road, for Mr. O. Archer; garage, 51, Well-street, for Mr. G. Butters; drainage, Lord Clyde public house, London-road, for Messrs. Harris & Wardrop; addition to factory, Mackintosh-lane, for Mr. M. M. Shire; sanitary improvements, 403, Mare-street, for Messrs. G. Garey & Son; drainage at "Albion" public house, 36, Lauriston-road, for Messrs. W. Bradford & Sons; drainage to three houses, Graham-road, for Messrs. J. Haydon & others.

LONDON (HAMMERSMITH).—Drainage plans passed by B.C.: At Manor Hall, Great Church-lane, for Fullers, Ltd.; at L.C.C. school, Wormholt-road, for Messrs. Holliday & Greenwood; at 34, Brook-green, for Mr. G. G. Keogh.—The application of Mr. F. J. Verity, to erect a cinema at Shepherd's Bush Green, has been acceded to by the B.C.

MALDON.—Plans for a bungalow, Spitel Farm, for Mr. A. Stevens, have been passed.

MARSKE.—Plan passed by R.D.C.: Cafe, at Marske, for Mr. C. Maskell.

PAISLEY.—The late Mr. John McLachlan, of Paisley, has bequeathed £1,000 to the trustees of the High Parish Church for the completion of a church hall.

PERSHORE.—The R.D.C. has decided to take steps to erect the following cottages:—Pinvin 20, Peopleton 8, Defford 8, Cropthorne 6, Throckmorton 6, Bishampton 6, Eckington 8, White Ladies, Aston, 6, Moor 2, Naunton Beauchamp 4, Dukes Broughton 6, and Wadborough 4.

POOLE.—Mr. F. Gregson Williams, an inspector of the Ministry of Health, has held inquiry into the application of the T.C. for a loan of £1,550 for the erection of a refreshment house at Sandbanks.

RICHMOND (YORKS.).—Plan passed by R.D.C.: Drainage at Old Manor House, Moulton, for Mr. Smithson.

ROMFORD.—Plans passed by U.D.C.: Three houses at Hare Park Estate, for Mr. C. E. Castellan; alterations to farm buildings at Hare Hall, for Mr. V. E. Castellan; two houses, Mildmay-road, for Mr. W. J. Kelley; a motor house at Hebers, North-street, for Dr. A. Ball; buildings at Hastings, North-street, for Mr. A. Gray; bungalow, Squirrels Heath-avenue, for Emery & Richards; house, Severn-avenue, Hare Park Estate, for Mr. C. E. Castellan; workshop, Cedar-street, for Mr. E. Cross.

SHILDON.—Sanction has been given to the U.D.C. to borrow £950 to purchase a site for a cemetery.

WILLESDEN.—Plans passed by U.D.C.: Drainage to St. Martin's Church Hall and Institute, Purves-road, Kensal Rise, by Messrs. Alder & Turrill, for the Rev. R. C. Turner; petrol store, Bentley Motor Factory, Edgware-road, Cricklewood, for Messrs. Bentley Motors, Ltd.; additions to factory, Acton-lane, Harlesden, by Messrs. Yetts, Sturdy & Usher, for Messrs. F. T. Morrell & Co.; two houses, Chatsworth-road, Cricklewood, for Mr. C. W. B. Simmons; petrol store, 2–3, Malvern Mews, Kilburn, for Mr. John White; drying shed, 88, Cobbold-road, Willesden, for Mr. George Matthews; oak staircase at rear and alterations at 41, St. John's-avenue, Harlesden, for Mr. A. J. Talbutt; covering to hoist, 106, Chamberlayne-road, Kensal Rise, by Mr. G. A. Sexton, for Messrs. Welford & Sons, Ltd.; extension of factory premises, Tennyson Works, Willesden-lane, Kilburn, by Mr. G. A. Sexton, for Messrs. Optics, Ltd.

WREXHAM.—Messrs. Lockwood, Abercrombie & Saxon, architects, have forwarded to the T.C. a town-planning scheme and it has been decided to ask Professor Abercrombie to attend a special meeting on the matter.

FIRES.

BANFF.—The greater part of the buildings of Banff Grammar School have been destroyed by fire.

GLASGOW.—A fire has occurred at the premises of the Distillers Co., North Canal Bank-street, Port Dundas.

LABOUR AND HOUSING.

WE take the following from a letter in the *Daily Telegraph*, by Mr. Thomas Dinwiddy, F.R.I.B.A., F.S.I.:—

"We hear indignant protests when the trade unions are charged with obstructing building by 'slow-stroke' tactics, and proof is demanded. Opportunities to test are rare, but it has fallen to my lot to offer evidence. Erecting a dwarf wall, a bricklayer and a labourer contrived in two days of 8½ hours to limit the bricks laid to 125. Their joint wages amounted to 25s. 6d. a day; the cost, therefore, of labour was fivepence for every brick. The standard of value is at per rod of 272 ft. super. 1½-brick thick, or about 4,200 bricks. At this rate of 5d. a brick, labour per rod would exceed £80. When the writer first practised, fifty years ago, labour was taken piece-work (including erecting scaffolds) at 50s. a rod, the men laying about 1,000 bricks a day. As recently as the date of the war, brickwork with all materials and profit was about £15 a rod; it has now increased threefold. As to the causes, beware of being put off the labour scent by the hue and cry after alleged merchants' rings and profiteering. Inflated wages and shackled output figure in all materials. For example, the bedrock of bricks is a few yards of clay costing shillings; from that stage all is labour, handling, and wages, until about £5 a thousand is reached for the finished article. Labour takes toll again on the building, and assuming an average of 300 bricks a day (as against the no doubt abnormal 60 vouched for), takes £19 a rod for a further share.

"The same methods rule in other trades where they are not so easy to test. The outside painting of a villa took 97½ hours before the war. Done since the war by the same firm, it took 160 hours, while cost rose from £9 to £23."

The London Association of Master Decorators.

At the annual meeting of the London Association of Master Decorators, the following officers were elected for the ensuing year:

President.—Mr. A. Andrews.

Vice-President.—Mr. H. L. Cabuche.

Treasurer.—Mr. T. S. Rowden.

Executive Council.—Messrs. A. G. Rhind, F. W. Loasby, F. Dejong, G. A. Candler, B. B. Cayley, J. P. Williams, E. Deacon, C. E. B. Head, and H. G. White.

Auditors.—Messrs. J. G. Watson and E. Lott.

Representatives of the Association on the Council of the National Federation.—Messrs. T. S. Rowden, H. L. Cabuche, A. G. Rhind, F. W. Loasby, W. Stewart-Greene, C. E. Campbell, and A. Andrews.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not *later than Tuesday evening*.

*** Denotes *accepted*. † Denotes *provisionally accepted*.**

‡ Denotes *recommended for acceptance*.

‖ Denotes *accepted subject to modifications*.

CHAPEL-EN-LE-FRITH.—For the construction of Bamford sewerage and sewage disposal works, for the R.D.C. Messrs. Brady & Partington, A.M.Inst. C.E., engineers:—

Dawson & Jones, Sheffield	£24,100 0 0
Mark Warrington, Ltd., Hyde	19,000 0 0
A. Hyslop & Co., Prestwich	18,638 0 5
John E. Nadin & Son, Sheffield	24,006 0 0
Ward & Tetley, Bradford	14,709 17 11
Charles Wade, Luddenden Foot	14,628 0 0
Abraham Graham, Huddersfield	14,480 15 1
Graham Denny & Co., London	17,171 13 6
Johnson & Langley, Harrow	15,826 10 9
W. Snape & Sons, Eccles	16,388 3 0
Herbert Ashley, Mansfield	15,429 2 7
R. Robinson & Co., Westminster	21,874 10 10
H. C. Pullar & Co., Manchester	21,350 11 6

FOLESHILL.—For the erection of houses, for the R.D.C.:—

*Crouch Bros.—	
Sixteen houses at Keresley	£15,560 0 0
*Clifford Grant—	
Sixty-six houses at Bedworth	61,402 16 11

FOLESHILL.—For the construction of street works at Bedworth, for the R.D.C.:—

*J. Smith	£304 12 0

FOLESHILL.—For construction of street works at Hen-lane, Foleshill, for the R.D.C.:—

*Trentham, Ltd.	£1,088 5 4

FOLKESTONE.—For additions to the Victoria Hospital. Messrs. Bromley & Dahl, architects, Radnor Chambers, Folkestone:—

*Baker & Co., Folkestone	£5,870
Hayward & Paramoor, Shorncliffe	5,962
Cook & Parker, Folkestone	6,070
Gosby, Folkestone	6,435
T. T. Denne, Walmer	6,466
Martin, Ramsgate	6,490
Jenner & Son, Folkestone	6,800
Denne & Son, Deal	6,853
O. Marx, Folkestone	6,957
Perry & Co., London	6,999
Lockwood & Co., Westgate-on-Sea	7,006
L. T. Dadds, Canterbury	7,371
Blay & Co., Dartford	7,379
Wallis & Son, Maidstone	7,754
Somerville & Co., London	7,999

GUILDFORD.—For the erection of 42 houses on four sites, in the Parish of Shere, for the R.D.C. Mr. J. H. Norris, architect, 51, High-street, Guildford:—

*W. G. Tarrant, Ltd., Byfleet	£35,160
Chapman, Lowry & Puttick, Ltd., Haslemere	35,638
T. Swayne & Son, Guildford	35,974
F. Milton & Sons, Witley	36,374
Bunning & Fitton Adams, Godalming	36,633
Stanley Ellis, Guildford	37,037
Walter Jones & Sons, Westminster	37,164
R. Cook & Sons, Crawley	37,596
H. D. Pullen & Co., Westminster	47,752

*Accepted subject to the approval of the Housing Commissioner.

HEMEL HEMPSTEAD.—For the erection of eight cottages in pairs at King's Langley, for the R.D.C. Mr. T. H. Lighbody, architect, 20, Marlowes, Hemel Hempstead. Quantities by architect:—

‡A. J. Eldridge, Watford	£7,407 0 0
Cole, Ltd., Luton	7,464 0 0
H. Lacey & Sons, Luton	7,595 0 0
King & Sons, Watford	7,640 16 0
Nautilus Co., Luton	7,736 16 5
Payne Bros., Leavesden	8,120 0 0
A. Timberlake, King's Langley	8,143 7 0
H. Tomkins & Sons, Luton	8,651 10 0
Hurkins & Frewin, Oxford	9,490 0 0

LLANTRISANT.—For the erection of a Boys' Council School (light structure), for the Glamorgan County Council. Mr. D. Pugh Jones, F.S.A., F.S.I., County Architect, Cardiff:—

*P. Gaylard, Bridgend	£7,995

LONDON.—For supply of materials to the Hammersmith B.C.:—

John Mowlem & Co., Ltd., S.W.1—Guernsey granite, £1 17s. 5d. per cub. yd., delivered river.

H. J. Greenham, Fulham—Unscreened river ballast, 7s. 9d. per cub. yd., delivered river.

H. J. Greenham, Fulham—Clean sharp sand, 12s. per cub. yd., delivered river.

J. Bennett, Putney—¾ in. pea gravel or shingle, £1 3s. delivered in lorry loads in the borough.

Sankey & Co., Ltd., W.6—Lime and cement, £199 8s., based on estimated total quantity (six months tender).

Sankey & Co., Ltd., W.6—Cement, £4 7s. 6d. per ton, delivered within the borough; £4 6s. 6d. per ton, at contractors' depots.

LONDON.—For cleaning and repainting Holborn Viaduct bridge and statues, for the City of London Corporation:—

*W. G. Beaumont & Son	£1,717

* See also our List of Contracts, Competitions, etc.

LONDON.—For installation of weighbridge of 20 tons capacity at depot of the Deptford B.C. :—

*Ashworth, Son & Co., Ltd., E.C.4	£667
F. Wedderburn, New Cross	720
Henry Pooley & Son, Ltd., E.C.	862
W. T. Avery, Ltd., E.C.	900

NEWPORT PAGNELL (BUCKS.).—For housing schemes, for the R.D.C. Mr. W. B. Stonebridge, F.S.A., architect, Bedford :—

Loughton (3 "A" type houses)—			
*J. H. Bird (revised).....	£2,248	5	0
J. H. Bird, Bradwell.....	2,829	12	0
W. F. Drew, Ltd., Chalford..	2,999	0	0
Sherington (10 "B" type houses)—			
*H. W. Cole, Newport Pagnell (revised)	8,909	8	0
Olney (28 "B" type houses and site works)—			
*W. T. Revitt, Olney (revised)	24,610	2	10
W. T. Revitt, Olney.....	28,117	0	0
F. Dawes ,Olney.....	29,818	0	0
E. C. Morgan, Olney.....	36,786	0	0
Moulsoe (10 "A" type houses)—			
*H. W. Cole, Newport Pagnell)	8,820	0	0
Woburn Sands (14 "B" type houses)—			
*Sinfield & Sons, Aspley Guise	13,749	0	0
J. H. Bird, Bradwell.....	16,682	0	0
Emgerton (8 "A" type houses)—			
*F. Dawes, Olney	5,988	0	0
Bow Brickhill (8 "A" type houses)—			
*J. H. Bird, Bradwell.....	5,565	0	0
Stoke Goldington (4 "A" type houses)—			
*Wilford Bros., Newport Pagnell	3,460	0	0
North Crawley (10 "A" type houses)—			
*S. & G. Brandon, North Crawley.....	9,164	15	4

SOUTHEND-ON-SEA.—For the erection of wooden-framed building to be used as conveniences, at Southchurch-road, for the T.C. Mr. Robert H. Dyer, Borough Engineer :—

*J. Atkinson, Southend	£460 9 1

WANDSWORTH.—For painting work at St. James' Infirmary, for the Wandsworth Union :—

	£	s.
*J. C. Carroll, E. 15.....	1,800	0
W. Mountain, S.W. 9.....	1,880	17
R. Haslam & Son, S.E. 18.....	1,896	10
Earl & Matthews, E. 17.....	2,070	10
H. Meckhonik, W. 1.....	2,085	0
F. C. Flack, S.W. 18.....	2,250	0
T. H. Jones, Farnborough, Hants.	2,289	10
Dilliway & Elvy, W. 14.....	2,398	16
S. T. Wright, S.E. 11.....	2,400	0
Stoneley & Co., E. 7.....	2,650	0
A. W. Pitkin, S.W. 6.....	2,800	0
R. Mansell, Croydon.....	2,855	0
Arding & Hobbs, S.W. 11.....	2,950	0
Chappell Bros., S.W. 17.....	3,475	0
H. T. Bishop, Ltd., S.W. 2.....	3,760	0
H. A. Thomas & Son, S.E. 22....	3,850	0
R. Woollaston & Co., E. 3.....	4,244	0
E. Bartlett & Sons, New Malden..	4,260	0
D. Halse & Co., Ltd., S.E. 18....	4,340	0
J. P. Tillotson, S.W. 1.....	4,391	0
Clout & Tysoe, Thornton Heath..	4,800	0
J. Darch, E.C. 4.....	5,500	0
W. H. Gaze & Sons, Ltd., W. 1....	5,977	0
W. J. Dixon & Son, S.E. 16.....	6,227	0
C. W. Peach, S.W. 7.....	7,530	0

WINDSOR.—For certain work to be executed at the isolation building at the Poor Law Institution, Old Windsor, for the Guardians of Windsor Union :—

*R. Hendry, Windsor.....	£60	0	0
H. Charman & Son, Ascot	92	12	0
D. Skeggs, Englefield-green	63	6	6

The German Reparation (Recovery) Act.

Under Section 5 of the German Reparation (Recovery) Act, which took effect on March 31, the Board of Trade may by order take certain action, as follows: (*a*) Importers of German goods are to pay to the Customs a prescribed proportion of the value of the goods, not exceeding 50 per cent. (*b*) Section 2 excludes from the provisions of the Act goods partially manufactured or produced in Germany which are not first consigned from that country and in which 25 per cent. or more of their value is attributable to processes of manufacture undergone since they last left Germany. (*c*) The Act does not apply to goods imported before April 15, if the goods are imported in pursuance of a contract entered into before March 8. (*d*) Where any person is liable, under a contract entered into before March 8, to accept bills of exchange or make advances in connection with the importation of any goods, he may apply to the High Court; and the Court, if satisfied that by reason of the provisions of this Act the enforcement of the contract would result in serious hardship to him, may suspend or annul, or with the consent of the parties amend the contract as from such date as the Court may think fit, or stay any proceedings for the enforcement of the contract or any term thereof, or any rights arising under it, on such conditions (if any) as the Court may think fit. The Board of Trade has power to extend or vary these provisions, but is not to make any order except on the recommendation of a committee which has been appointed to advise on the matter. Applications to the Board of Trade to make an order under the Act should be addressed to the Secretary, Board of Trade, Great George-street, Westminster, and both the letter and envelope should be marked "German Reparation."

DRY JAPANESE
OAK FLOORING
READY FOR LAYING.
SYDNEY PRIDAY
25, Monument Street, E.C.3
Telephone Nos.: AVENUE 667 & 4817

THE LONDON & LANCASHIRE INSURANCE Co. LTD.
Security - - - £9,304,782
FIRE.
CONSEQUENTIAL LOSS.
ACCIDENTS.
BURGLARY. PLATE GLASS.
EMPLOYERS' LIABILITY.
MARINE.
Head Offices:
45, Dale Street, Liverpool.
155, Leadenhall Street, London, E.C.3.
Chief Administration:
5 & 7, Chancery Lane, London, W.C.2

J. J. ETRIDGE, JR. Ltd
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS.
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone; Avenue 4940 (two lines), or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

War Memorials, Church Tablets, Celtic Crosses,
in Stone, Marble, or Granite. *Designs Free.*
MARBLE SHOPFITTINGS & STEPS.
KELLY & CO.
(Cramb Bros.) Ltd.
129, Marylebone Road, N.W.1
Phone: "Padd. 5518."

IT PAYS
TO EMPLOY A BROKER FOR ALL INSURANCES.
SHERWELL'S NEPHEWS
Insurance Brokers,
8, QUEEN ST., LONDON, E.C.4.
Telephone No.: CITY 7482.

OGILVIE & CO., Telephone: DALSTON 1308. Many years connected with the late firm of W. H. LASCELLES & Co., of Bunhill Row.
Mildmay Works, Mildmay Avenue, Islington, N.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ELECTRICAL INSTALLATIONS | LIGHTING HEATING POWER
SCHEMES PREPARED AND REPORTS MADE ON PLANTS AND INSTALLATIONS IN ANY PART OF THE COUNTRY
WARING WITHERS & CHADWICK
10A SOHO SQ. W.1.
TELEGRAMS: "WARINGITES OX LONDON."
TELEPHONES: GERRARD 4118 REGENT 2442

HOWELL J. WILLIAMS Ltd.
Builders
High-Class Building and Joinery Work
11/17, BERMONDSEY STREET, LONDON BRIDGE, S.E. 1.
Telephone: HOP 202
Builders of very many well-known Banks, Office and Business premises. Our works especially convenient for City Building and fittings.